ZOOPLANKTON VOLUMES OFF THE PACIFIC COAST, 1956

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United States Department of the Interior, Fred A. Seaton, Secretary
Fish and Wildlife Service

ZOOPLANKTON VOLUMES OFF THE PACIFIC COAST, 1956

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Abstract

Basic data on volumes of zooplankton off the Pacific coast in 1956 are given, together with haul data for all plankton hauls taken on survey cruises of the California Cooperative Oceanic Fisheries Investigations. Distribution charts showing relative areal zooplankton abundance by month are included.

Zooplankton Volumes off the Pacific Coast, 1956

The six reports in this series preceding this one have appeared under the authorship of the staff of the South Pacific Fishery Investigations. They cover the seven-year period, 1949 through 1955. Distribution charts for all routine cruises made during these years have been presented in Thrailkill, 1956. This report combines both the basic data on zooplankton volumes and distribution charts of zooplankton abundance for each cruise made in 1956 off the Pacific coast of California and Baja California.

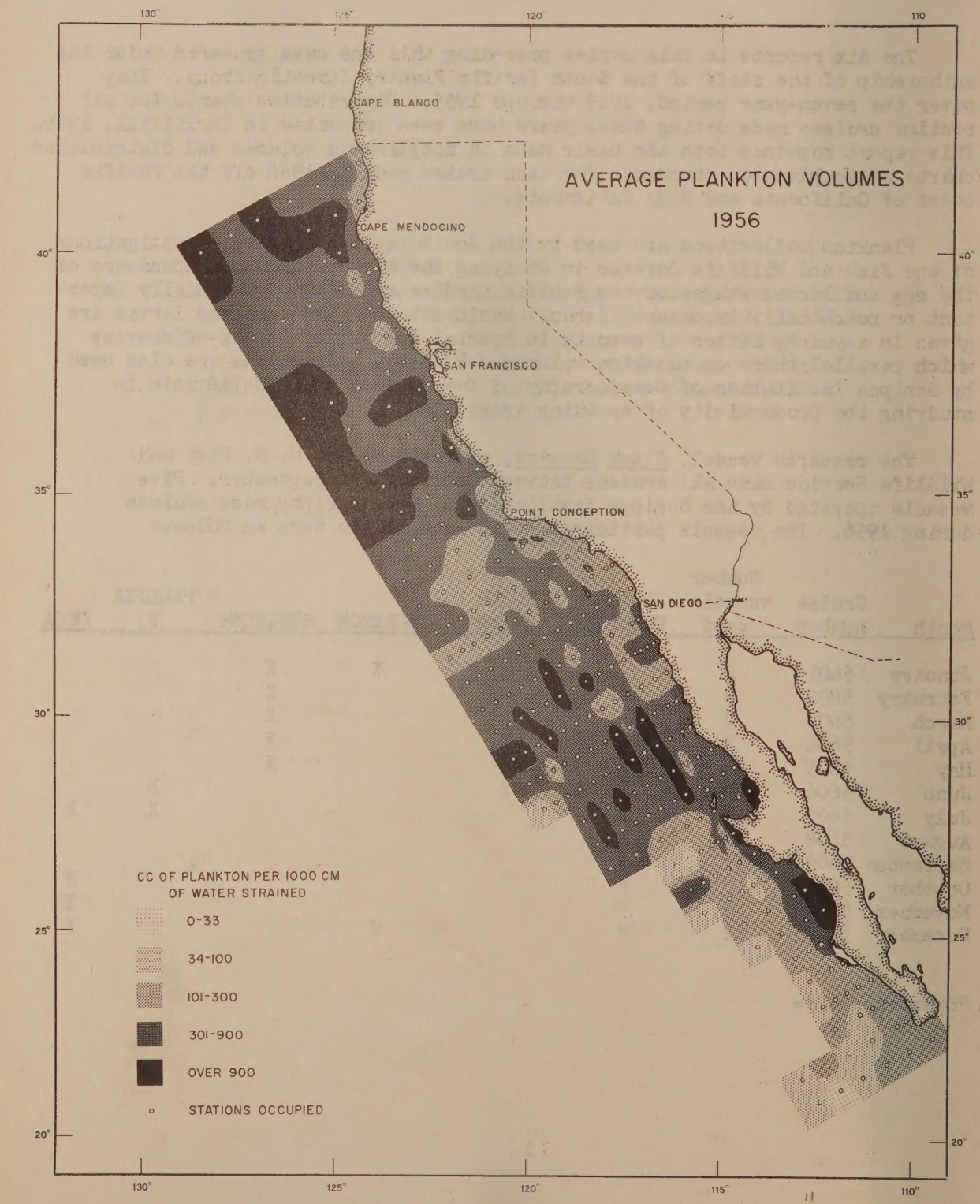
Plankton collections are used by the South Pacific Fishery Investigations of the Fish and Wildlife Service in studying the distribution and abundance of the egg and larval stages of the Pacific sardine and other commercially important or potentially important fishes. Basic data on fish eggs and larvae are given in a yearly series of reports in Special Scientific Report--Fisheries which parallel those on plankton volumes. Plankton collections are also used by Scripps Institution of Oceanography of the University of California in studying the productivity of spawning areas.

The research vessel, Black Douglas, operated by the U. S. Fish and Wildlife Service made all cruises between February and September. Five vessels operated by the Scripps Institution of Oceanography made cruises during 1956. The vessels participating in each cruise were as follows:

Month	Cruise number	Number vessels used	BLACK DOUGLAS	SPENCER F. BAIRD	HORIZON	STRANGER	PAOLINA T.	ORCA
January	5601	2			X	X		
February	5602	3	X	X		X		
March	5603	2	X			X		
April	5604	3	X	X		X		
May	5605	3	X	X		X		
June	5606	3	X	X			X	
July	5607	3	X				X	X
August	5608	1	X					
September	5609	1	X					
October	5610	1	*					X
November	5611	1	*					X
December	5612	2	*		X			X

*Special cruise

Figure 1.—Average Plankton Volumes
1956



A chronological listing of California Cooperative Oceanic Fisheries Investigations cruises for 1956, with information of the area covered and the numbers of stations occupied on each cruise follows:

Month	Cruise number	Area covered, station lines	Number of stations occupied
January	5601	80-157	112
February	5602	80-157	132
March	5603	80-137	135
April	5604	60-157	179
May	5605	40-137	239
June	5606	40-137	210
July	5607	60-137	203
August	5608	110-137	36
September	5609	110-137	36
October	5610	80-97	42
November	5611	80-97	40
December	5612	80-97	42

The tables in this report contain a record of the "wet" plankton volumes of all plankton samples taken on routine survey cruises off the Pacific Coast during 1956 (columns 9 and 10), and contain basic information on each haul, including station number (column 1), location (columns 2 and 3), date and time of collection (columns 4 and 6), volume of water strained (column 7) and the estimated depth of the haul (column 8).

Wet plankton volumes are determined as follows: the plankton is separated from its preserving liquid (3% formalin) by filtering, allowed to drain and the displacement volume is obtained by placing drained wet plankton in a graduated cylinder with a known volume of water. Two volumes are recorded for each station: (1) the total wet volumes standardized to the amount in one thousand (1,000) cubic meters of water strained, and (2) the volume of smaller organisms after removal of larger organisms, such as jellies, fish, squid, salps, pyrosomes, larger molluscs and larger crustaceans. The criterion used for a larger organism (except in the case of juvenile or adult fish) is one whose volume exceeds five cubic centimeters (5 cc.).

The charts in this report are based on the volume of smaller organisms. In order to obtain a good contrast between light and heavy concentrations of plankton, five categories have been used to divide the abundance of plankton as follows: (1) light, 0 to 33 cc. of plankton per 1,000 cubic meters of water strained; (2) moderate, 34 to 100 cc. of plankton per 1,000 cubic meters of water strained; (3) average, 101 to 300 cc. of plankton per 1,000 cubic meters of water strained; (4) fairly heavy, 301 to 900 cc. of plankton per 1,000 cubic meters of water strained; (5) heavy, more than 900 cc. of plankton per 1,000 cubic meters of water strained.

Two types of plankton nets were used in the collection of samples: (1) constructed of No. 30xxx grit gauze (an extra heavy type of silk bolting cloth); (2) constructed of nylon, but whose dimensions and mesh sizes are approximately one hundred and forty (140) meters deep to the surface (depth of water permitting).

These investigations are part of the California Cooperative Oceanic Fisheries Investigations, a program sponsored by the Marine Research Committee and carried out by the Scripps Institution of Oceanography of the University of California, the Bureau of Marine Fisheries of the California Department of Fish and Game, the California Academy of Sciences, the Hopkins Marine Station of Stanford University and the South Pacific Fishery Investigations of the Fish and Wildlife Service.

It is with deep pleasure that the author acknowledges the cooperation given by the Scripps Institution of Oceanography in the collection of data at sea. All personnel of the South Pacific Fishery Investigations contributed to this project--many devoting their full time to it.

The earlier publications in this series are the following:

STAFF, SOUTH PACIFIC FISHERY INVESTIGATIONS

1952 Zooplankton volumes off the Pacific coast, 1951. U. S. Dept. Interior, Fish and Wildlife Service, Spec. Sci. Rept--Fisheries No. 73, 37 pp.

1953 Zooplankton volumes off the Pacific coast, 1952. U. S. Dept. Interior, Fish and Wildlife Service, Spec. Sci. Rept--Fisheries No. 100, 41 pp.

1954 Zooplankton volumes off the Pacific coast, 1949-50. U. S. Dept. Interior, Fish and Wildlife Service, Spec. Sci. Rept--Fisheries No. 125, 54 pp.

1954 Zooplankton volumes off the Pacific coast, 1953. U. S. Dept. Interior, Fish and Wildlife Service, Spec. Sci. Rept--Fisheries No. 132, 38 pp.

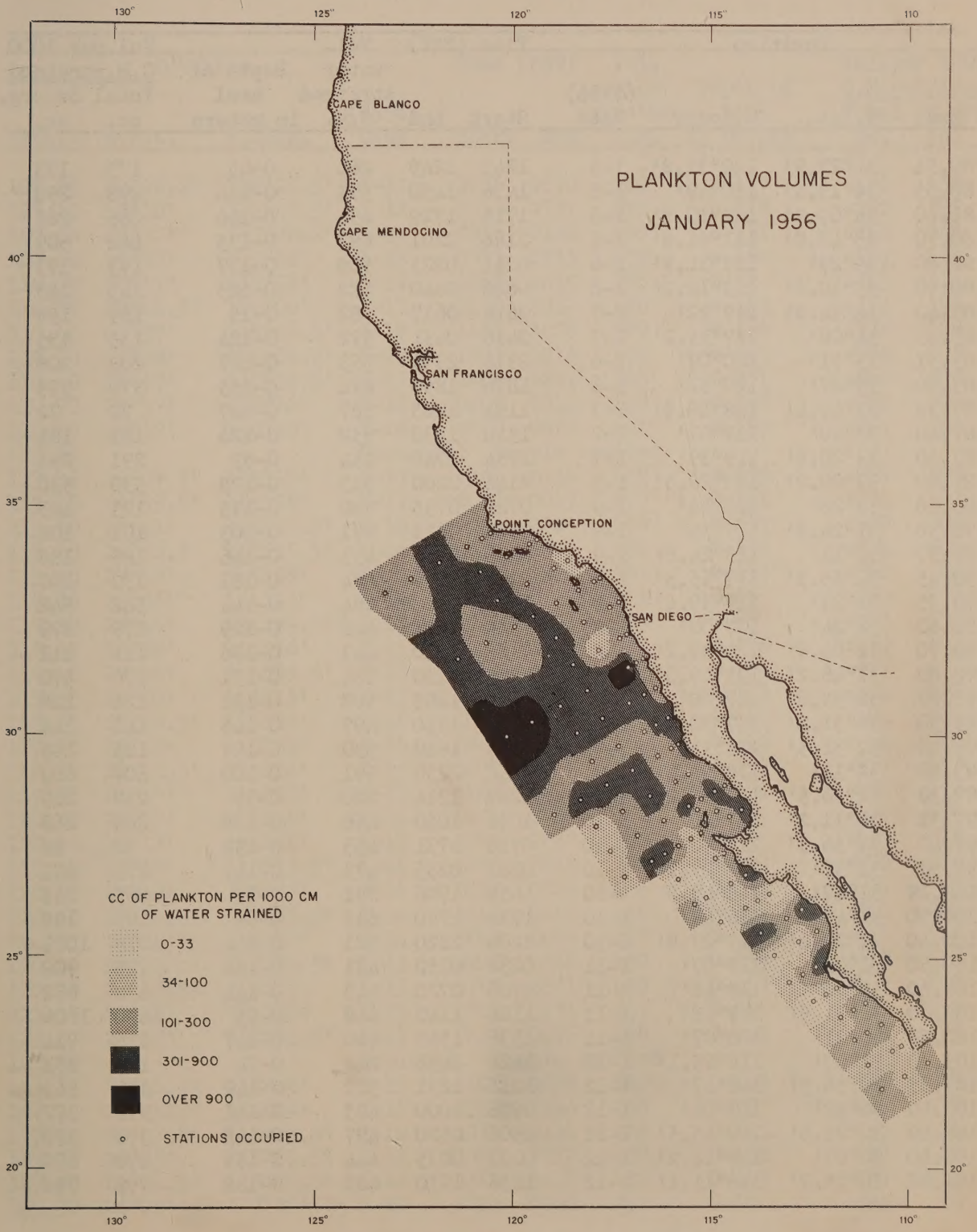
1955 Zooplankton volumes off the Pacific coast, 1954. U. S. Dept. Interior, Fish and Wildlife Service, Spec. Sci. Rept--Fisheries No. 161, 35 pp.

1956 Zooplankton volumes off the Pacific coast, 1955. U. S. Dept. Interior, Fish and Wildlife Service, Spec. Sci. Rept--Fisheries No. 177, 31 pp.

THRAILKILL, JAMES R.

1956 Relative Areal Zooplankton Abundance off the Pacific coast, U. S. Dept. Interior, Fish and Wildlife Service, Spec. Sci. Rept--Fisheries, No. 188, 85 pp.

Figure 2.--Plankton Volumes
January 1956



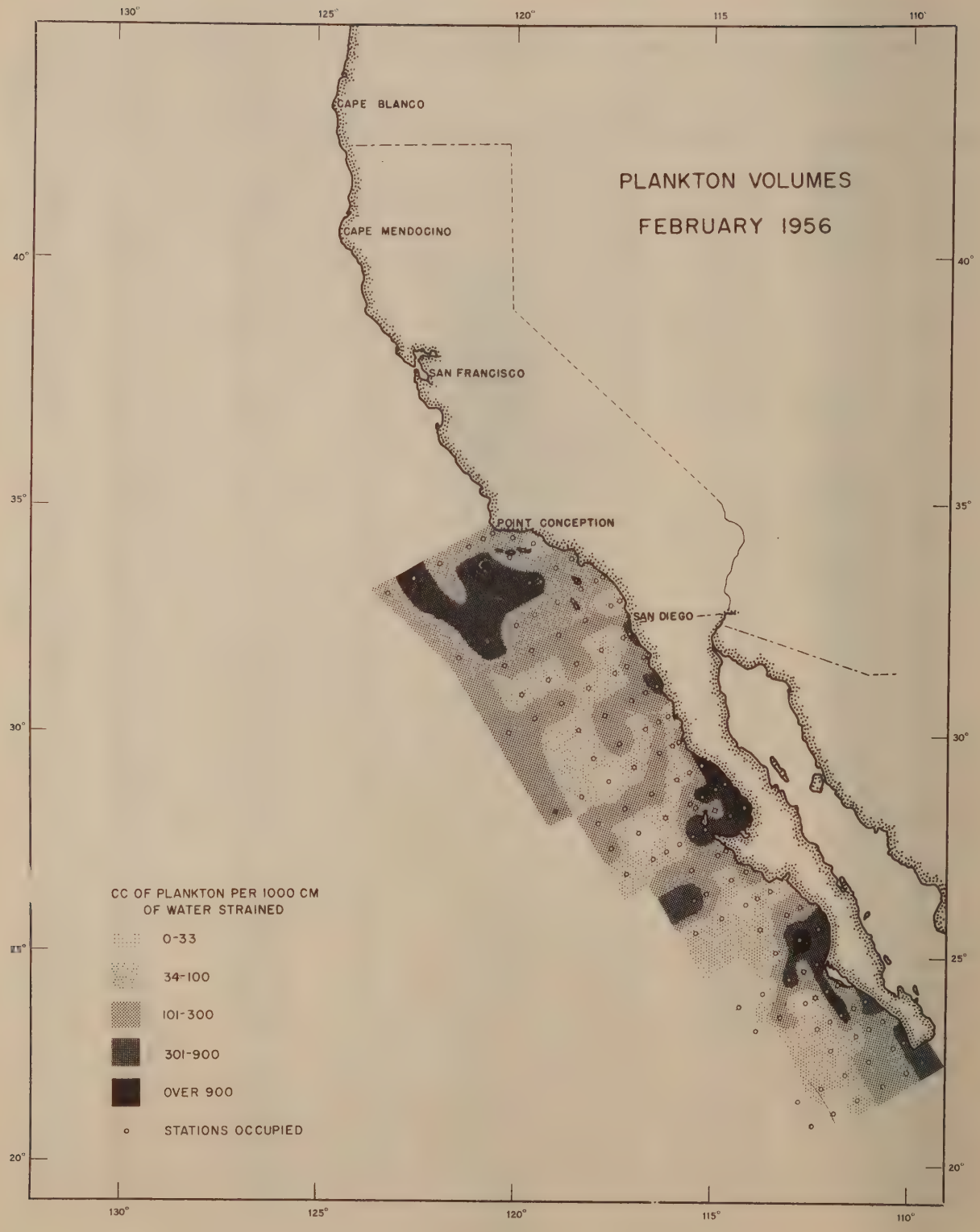
Plankton Volumes, Cruise 5601, January 1956

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
Sta.	N.lat.	W.long.	(1956) Date	Start	End	C.M.	in meters	Total cc.	Sm.org. cc.
80.51	34°27.9'	120°31.8'	I-5	1243	1249	266	0-45	173	173
80.55	34°19.4'	120°49'	I-5	1436	1450	571	0-114	298	298
80.60	34°09.2'	121°10.9'	I-5	1716	1729	434	0-146	265	265
80.70	33°48.8'	121°51.8'	I-5	2146	2201	483	0-135	642	509
80.80	33°29'	122°34.9'	I-6	0211	0225	508	0-137	193	193
80.90	33°10.6'	123°12.2'	I-6	0626	0640	582	0-123	143	143
83.40	34°14.8'	119°22'	I-7	0614	0617	82	0-15	159	159
83.43	34°08'	119°35.2'	I-7	0416	0431	592	0-124	135	135
83.51	33°51'	120°09'	I-6	2316	2331	553	0-127	208	208
83.60	33°27'	120°51'	I-6	1836	1850	474	0-155	379	379
87.36	33°49.4'	118°40.9'	I-7	1151	1205	587	0-107	72	72
87.40	33°40'	119°01'	I-7	1316	1330	532	0-126	181	181
87.50	33°20.5'	119°39'	I-7	1734	1740	254	0-53	291	291
87.60	33°00.2'	120°20.5'	I-7	2146	2200	513	0-128	530	530
90.28	33°28'	117°46'	I-9	0721	0735	530	0-115	123	123
90.30	33°24.8'	117°55'	I-9	0606	0621	691	0-103	101	101
90.37	33°11'	118°24.8'	I-9	0236	0250	453	0-146	185	185
90.45	32°55.3'	118°55.3'	I-8	2311	2326	484	0-151	130	130
90.55	32°33'	119°39.4'	I-8	1806	1820	484	0-144	542	542
90.60	32°24'	120°00'	I-8	1546	1601	646	0-129	279	279
90.70	32°06.5'	120°39.2'	I-8	1126	1140	443	0-156	111	111
90.80	31°46.2'	121°19.5'	I-8	0706	0720	534	0-131	570	570
93.27	32°55.8'	117°20'	I-9	1151	1205	508	0-131	128	128
93.30	32°51.2'	117°30.2'	I-9	1316	1330	497	0-145	141	141
93.40	32°31.5'	118°13'	I-9	1756	1810	530	0-127	185	185
93.50	32°11'	118°53.2'	I-9	2216	2230	591	0-100	609	609
97.30	32°16.5'	117°08.2'	I-10	1209	1214	220	0-39	219	219
97.32	32°11.2'	117°20'	I-10	1036	1050	456	0-138	263	263
97.40	31°56.3'	117°50'	I-10	0716	0731	455	0-138	88	88
97.50	31°37'	118°29.9'	I-10	0241	0255	473	0-147	871	871
100.29	31°47'	116°43.5'	I-10	1659	1706	291	0-72	265	265
100.30	31°42'	116°43'	I-10	1736	1750	615	0-99	195	195
100.40	31°20.2'	117°27.8'	I-10	2206	2220	521	0-114	1079	1079
100.50	31°01'	118°07'	I-11	0236	0250	433	0-154	725	309
100.60	30°40'	118°48'	I-11	0706	0720	443	0-144	632	632
100.70	30°21.5'	119°28'	I-11	1126	1140	648	0-95	1606	1606
100.80	30°01'	120°07'	I-11	1536	1550	460	0-147	914	914
103.30	31°07'	116°25.1'	I-12	1428	1435	242	0-74	153	153
103.35	30°56.5'	116°47'	I-12	1216	1231	512	0-149	363	363
103.40	30°47'	117°06'	I-12	0946	1000	425	0-141	377	377
103.50	30°25.5'	117°45.5'	I-12	0506	0520	497	0-145	370	370
103.60	30°07'	118°24.2'	I-12	0021	0035	444	0-155	670	670
107.32	30°25.9'	116°11.1'	I-12	1856	1910	482	0-138	798	798

Plankton Volumes, Cruise 5601, January 1956 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
			(1956)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
107.35	30°20.2'	116°22.5'	I-12	2036	2050	489	0-127	450	450
107.40	30°10'	116°42.5'	I-12	2316	2331	552	0-116	232	232
107.50	29°50'	117°22.2'	I-13	0336	0350	467	0-151	242	242
107.60	29°27'	117°58'	I-13	0721	0735	470	0-150	117	117
110.33	29°51'	115°53'	I-17	1048	1055	255	0-58	313	313
110.35	29°46.5'	116°00'	I-17	1156	1210	480	0-142	171	171
110.40	29°37'	116°16.5'	I-17	1411	1426	509	0-140	138	138
110.50	29°18'	116°52.5'	I-17	1801	1815	450	0-147	378	378
110.60	28°57'	117°38.5'	I-17	2206	2221	509	0-131	690	690
110.70	28°37'	118°16'	I-18	0202	0216	448	0-156	592	592
110.80	28°17'	118°55'	I-18	0610	0625	460	0-159	261	261
113.30			Occupied. Sample spoiled						
113.35	29°09.5'	115°37'	I-17	0341	0356	428	0-155	288	288
113.40	28°59.5'	115°58'	I-17	0030	0045	475	0-141	3574	162
113.50	28°41'	116°37.5'	I-16	2006	2021	498	0-137	500	500
113.60	28°22.5'	117°15.5'	I-16	1516	1531	484	0-136	634	248
113.70	28°02'	117°55'	I-16	1102	1117	531	0-133	40	40
117.26	28°56'	114°41'	I-15	0828	0835	228	0-66	233	233
117.30	28°45'	114°59.5'	I-15	1042	1053	355	0-98	907	338
117.35	28°38'	115°16'	I-15	1316	1331	521	0-136	419	131
117.40	28°28'	115°35.5'	I-15	1845	1900	518	0-136	937	691
117.50	28°08'	116°15'	I-15	2251	2306	452	0-146	126	126
117.60	27°48.5'	116°53'	I-16	0156	0211	460	0-147	104	104
117.70	27°28'	117°33'	I-16	0641	0655	476	0-146	44	44
118.39	28°18.5'	115°24'	I-15	1631	1645	546	0-133	117	117
119.33	28°19'	114°53'	I-15	0007	0018	341	0-104	651	152
120.25	28°23'	114°15'	I-15	0424	0429	162	0-52	309	309
120.30	28°13'	114°34'	I-15	0207	0217	328	0-92	618	271
120.40	27°53'	115°13.5'	I-14	0811	0815	170	0-18	170	170
120.45	27°43'	115°33'	I-14	0530	0545	464	0-153	95	95
120.50	27°34.5'	115°53.5'	I-14	0301	0315	458	0-144	240	240
120.55	27°24'	116°12'	I-14	0041	0056	497	0-155	616	525
120.60	27°14'	116°30.5'	I-13	2222	2236	430	0-157	318	318
120.70	26°55.5'	117°13'	I-13	1806	1821	479	0-153	100	100
123.37	27°24'	114°40'	I-13	0324	0331	257	0-57	253	253
123.40	27°18'	114°51.5'	I-13	0437	0452	496	0-141	93	93
123.50			Occupied. Sample spoiled						
123.55	26°46.5'	115°49'	I-13	1006	1020	510	0-138	178	18
127.34	26°55.5'	114°06'	I-12	2338	2346	250	0-70	475	475
127.40	26°43.5'	114°29.5'	I-12	2111	2126	526	0-133	76	76
127.50	26°25'	115°05.5'	I-12	1717	1732	480	0-152	29	29
127.55	26°14.5'	115°26.5'	I-12	1500	1515	482	0-143	280	280
130.30	26°28'	113°30'	I-12	0213	0220	231	0-60	594	30

Figure 3.--Plankton Volumes
February 1956



Plankton Volumes, Cruise 5601, January 1956 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
			(1956)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
130.35	26°17'	113°50'	I-12	0433	0448	465	0-148	45	45
130.40	26°06.5'	114°09'	I-12	0646	0701	516	0-139	35	35
130.50	25°45'	114°47'	I-12	1021	1036	540	0-117	17	17
133.25	26°04.5'	112°48'	I-11	2153	2201	308	0-69	338	338
133.30	25°54.5'	113°07'	I-11	1946	2001	486	0-140	132	132
133.40	25°33.5'	113°47.5'	I-11	1601	1615	440	0-164	546	546
137.23	25°34'	112°18.5'	I-11	0553	0600	283	0-70	166	166
137.30	25°20.5'	112°45'	I-11	0831	0845	562	0-122	14	14
137.40	25°00'	113°26'	I-11	1200	1215	555	0-138	16	16
140.30	24°45.5'	112°24'	I-11	0058	0105	270	0-48	668	668
140.35	24°36.5'	112°41'	I-10	2252	2306	461	0-143	191	191
140.40	24°26'	113°02.5'	I-10	2026	2040	573	0-133	79	79
143.26	24°19'	111°48'	I-9	0534	0540	239	0-32	100	100
143.30	24°10.5'	112°04'	I-10	1356	1411	488	0-146	61	61
143.35	24°02'	112°22.5'	I-10	1606	1620	526	0-134	17	17
147.20	23°56'	111°03.5'	I-9	0046	0101	473	0-149	171	171
147.25	23°46.5'	111°22'	I-8	2211	2226	440	0-161	168	168
147.30	23°36'	111°41.5'	I-8	1923	1950	261	0-67	882	77
150.19	23°24'	110°39'	I-8	0936	0951	529	0-130	293	265
150.25	23°12'	111°01.5'	I-8	1221	1236	464	0-142	263	263
150.30	23°02'	111°19.5'	I-8	1451	1506	483	0-145	124	124
153.16	22°55'	110°07'	I-8	0522	0533	424	0-101	19	19
153.20	22°47'	110°22.5'	I-8	0308	0323	516	0-139	99	99
153.30	22°27'	110°58.5'	I-7	2231	2245	514	0-137	86	86
157.10	22°32.5'	109°23'	I-7	0928	0943	604	0-125	215	215
157.20	22°13'	110°00'	I-7	1341	1355	538	0-137	65	65
157.30	21°53.5'	110°38'	I-7	1804	1818	571	0-139	128	128

Plankton Volumes, Cruise 5602, February 1956

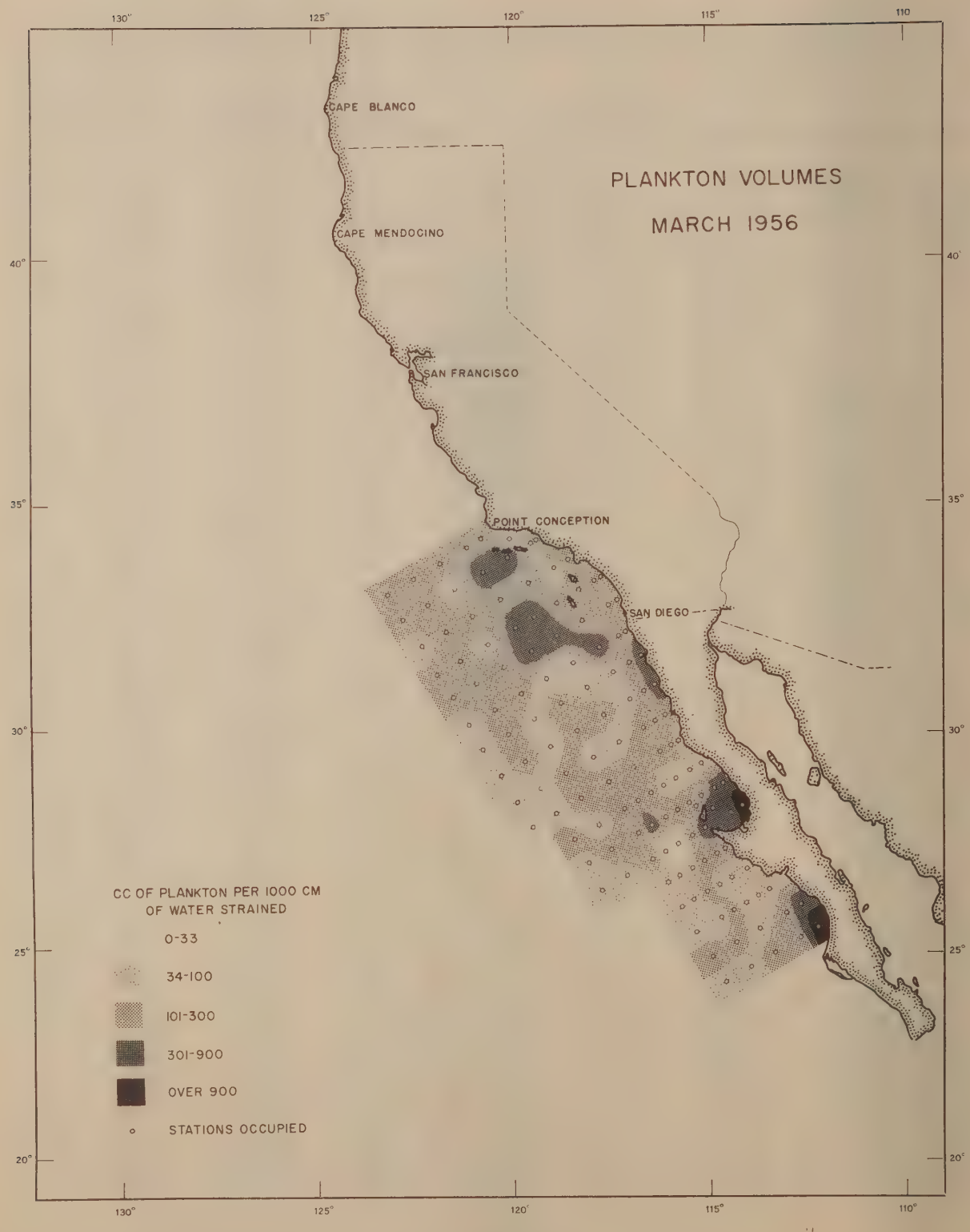
80.51	34°26'	120°33'	II-3	0933	0940	348	0-56	362	109
80.55	34°18.5'	120°49.5'	II-3	1116	1131	536	0-123	164	164
80.60	34°08.5'	121°09.5'	II-3	1446	1500	464	0-147	285	285
80.70	33°47'	121°53'	II-3	0011	0026	467	0-143	231	231
80.80	33°26.5'	122°36.5'	II-4	0606	0621	491	0-145	440	440
80.90	33°08.5'	123°14'	II-4	1126	1141	467	0-143	193	193
82.47	34°16'	119°58'	II-6	0936	0951	550	0-118	146	146
83.40			Occupied. Surface tow only.						
83.43	34°08'	119°35'	II-6	1306	1321	468	0-139	85	85
83.51	33°52.5'	120°05.5'	II-5	1034	1038	186	0-25	172	172
83.60	33°33.5'	120°45'	II-5	0111	0126	509	0-132	944	944
87.36	33°47.5'	118°42.5'	II-6	2001	2016	422	0-142	123	123

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
87.40	33°39.5'	118°59'	II-6	2256	2311	457	0-144	162	162
87.50	33°20'	119°40'	II-7	0318	0325	190	0-55	463	463
87.60	32°59.5'	120°21.5'	II-7	0841	0857	488	0-141	606	320
90.28	33°28.5'	117°45.5'	II-9	0403	0411	258	0-70	194	194
90.30	33°24.5'	117°54.5'	II-9	0241	0256	490	0-138	143	143
90.37	33°10.5'	118°23'	II-8	2056	2111	431	0-146	378	227
90.45	32°54.5'	118°56'	II-8	1611	1626	470	0-128	170	170
90.55	32°33.5'	119°35'	II-8	1041	1056	438	0-144	1173	160
90.60	32°22.5'	119°56'	II-8	0736	0751	464	0-143	436	112
90.70	32°04'	120°39'	II-7	0131	0146	457	0-141	433	433
90.80	31°43'	121°20.5'	II-7	1921	1936	353	0-146	1040	119
93.27	32°56'	117°19'	II-9	0908	0916	285	0-67	77	77
93.30	32°50'	117°31'	II-9	1131	1146	560	0-98	71	71
93.40	32°30'	118°12'	II-9	2216	2231	478	0-132	661	138
93.50	32°12'	118°54.5'	II-10	0311	0324	477	0-129	1089	210
93.60	31°50'	119°34'	II-10	0831	0846	465	0-139	344	151
93.70	31°30'	120°15.5'	II-10	1321	1335	429	0-143	293	107
97.30	32°15.5'	117°09'	II-11	1629	1634	169	0-37	594	594
97.32	32°11.5'	117°15.5'	II-11	1511	1526	476	0-130	429	80
97.40	31°55.5'	117°50.5'	II-11	1046	1101	454	0-138	900	79
97.50	31°35.5'	118°31'	II-11	0456	0510	470	0-135	634	230
97.60	31°13.5'	119°11.5'	II-10	2336	2351	436	0-147	216	96
97.70	30°55.5'	119°51.5'	II-10	1806	1821	485	0-139	377	99
100.29	31°42'	116°43.5'	II-11	2036	2050	423	0-123	303	137
100.33	31°35'	116°58.5'	II-11	2306	2321	439	0-161	583	146
100.40	31°21'	117°27'	II-12	0421	0435	471	0-119	1116	76
100.50	31°03'	118°09'	II-12	0956	1011	429	0-144	331	93
100.60	30°41'	118°47'	II-12	1531	1545	472	0-129	668	170
100.70	30°21'	119°27.5'	II-12	2026	2041	426	0-147	174	174
100.80	30°01.5'	120°07'	II-13	0106	0121	457	0-140	131	131
103.30	31°05.5'	116°25'	II-14	0113	0121	231	0-67	407	407
103.35	30°55'	116°45'	II-13	2246	2301	433	0-138	309	231
103.40	30°45'	117°05.5'	II-13	1941	1956	477	0-136	1275	122
103.50	30°27'	117°46.5'	II-13	1411	1426	445	0-134	677	126
103.60	30°07'	118°26.5'	II-13	0931	0946	479	0-135	75	38
107.32	30°26'	116°11'	II-14	0526	0541	442	0-133	77	77
107.35	30°20'	116°23'	II-14	0841	0856	417	0-147	237	144
107.40	30°10.5'	116°43'	II-14	1141	1156	451	0-136	1811	36
107.50	29°50'	117°23.5'	II-14	1651	1706	433	0-138	684	176
107.60	29°31.5'	118°01.5'	II-14	2136	2151	411	0-145	419	54
110.33	29°50'	115°52'	II-17	0939	0944	162	0-39	580	210
110.35	29°47'	116°00'	II-17	0821	0836	477	0-130	1023	38
110.40	29°32.5'	116°17'	II-17	0501	0516	423	0-137	9037	250

Plankton Volumes, Cruise 5602, February 1956 (cont'd)

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
110.50	29°14'	116°58'	II-16	2306	2321	476	0-140	189	74
110.60	28°56'	117°38'	II-16	1656	1710	490	0-139	196	29
110.70	28°36'	118°18'	II-16	1201	1216	456	0-142	878	44
110.80	28°16'	118°57.5'	II-16	0626	0641	452	0-144	1155	137
113.30	29°22'	115°18'	II-17	1409	1414	175	0-36	799	799
113.35	29°11'	115°39'	II-17	1711	1726	466	0-129	2814	69
113.40	29°01'	115°58'	II-17	2006	2021	463	0-133	897	65
113.50	28°41'	116°38'	II-18	0141	0156	436	0-133	5730	200
113.60	28°22'	117°15'	II-18	0501	0516	466	0-128	1051	150
113.70	28°04'	117°52'	II-17	0041	0056	456	0-134	820	228
117.26	28°55.6'	114°40.6'	II-16	1828	1835	284	0-64	433	416
117.30	28°47.6'	114°55.6'	II-16	2028	2037	238	0-74	1112	378
117.35	28°38.5'	115°18'	II-16	2256	2311	448	0-129	424	313
117.40	28°28.8'	115°36'	II-17	0441	0456	572	0-138	364	259
117.50	28°08'	116°15.2'	II-17	1041	1055	412	0-131	425	97
117.60	27°47.8'	116°52'	II-17	1556	1611	515	0-126	280	27
117.70	27°32'	117°31.5'	II-17	2006	2021	409	0-153	798	113
118.39	28°18.5'	115°23'	II-17	0211	0226	471	0-132	853	259
119.33	28°19.5'	114°53.5'	II-16	1013	1022	295	0-74	7858	156
120.25	28°22.8'	114°14.5'	II-16	1429	1434	180	0-44	412	412
120.30	28°13.5'	114°34'	II-16	1218	1227	289	0-82	900	433
120.40	27°52.5'	115°14.5'	II-16	0543	0550	282	0-66	766	766
120.45	27°42'	115°32.5'	II-16	0316	0331	446	0-136	505	381
120.50	27°34'	115°50'	II-16	0026	0041	441	0-137	163	68
120.55	27°26'	116°06'	II-15	2151	2166	475	0-126	316	50
120.60	27°15.5'	116°27'	II-15	1826	1840	300	0-133	1820	50
120.70	26°53.5'	117°09.5'	II-15	1316	1331	645	0-133	232	46
123.37	27°24.2'	114°39.8'	II-14	1918	1925	248	0-60	217	217
123.42	27°14'	114°59'	II-14	2216	2231	415	0-142	236	188
123.50	26°58'	115°30.5'	II-15	0211	0226	482	0-131	297	141
123.55	Occupied. Sample spoiled								
127.34	26°55.5'	114°06.2'	II-14	1448	1456	242	0-68	322	223
127.40	26°43.5'	114°29.5'	II-14	1211	1226	484	0-127	41	41
127.50	26°22.5'	115°07'	II-14	0716	0731	470	0-133	170	136
127.55	26°11.5'	115°28'	II-14	0416	0431	497	0-130	730	368
130.30	26°29'	113°29'	II-13	0709	0714	223	0-33	45	45
130.35	26°19.5'	113°50.2'	II-13	1016	1030	512	0-128	391	98
130.40	26°09'	114°08'	II-13	1256	1311	525	0-129	15	15
130.50	25°49'	114°42'	II-13	1746	1760	489	0-131	70	70
130.60	25°29'	115°23'	II-13	2256	2311	434	0-146	184	46
133.25	26°04.5'	112°48'	II-13	0223	0231	207	0-64	299	145
133.30	25°55.5'	113°08.2'	II-12	2351	0006	430	0-122	130	130
133.40	25°32.8'	113°45'	II-12	1851	1905	485	0-131	219	87

Figure 4.--Plankton Volumes
March 1956



Plankton Volumes, Cruise 5602, February 1956 (cont'd)

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
137.23	25°34'	112°19'	II-12	0557	0605	366	0-54	377	377
137.30	25°21.2'	112°45.8'	II-12	0926	0940	422	0-139	2880	2880
137.40	24°59.5'	113°24.2'	II-12	1406	1421	402	0-136	647	75
140.30	24°45'	112°24'	II-12	0027	0038	329	0-105	414	414
140.35	24°35'	112°44'	II-11	2141	2156	424	0-152	257	198
140.40	24°29'	113°02'	II-11	1926	1940	487	0-145	417	304
140.50	24°05'	113°45'	II-11	1411	1426	576	0-127	21	21
140.60	23°46'	114°16'	II-11	0906	0920	477	0-135	21	21
143.26	24°19'	111°48'	II-9	0910	0916	238	0-45	59	59
143.30	24°11'	112°03'	II-10	1146	1201	461	0-144	495	495
143.35	24°00'	112°22'	II-10	1426	1440	505	0-129	71	71
143.40	23°51'	112°40'	II-10	1726	1736	571	0-128	32	32
143.50	23°32'	113°18'	II-10	2236	2251	476	0-136	122	122
143.60	23°12.5'	113°56'	II-11	0326	0341	452	0-155	18	18
147.20	23°55.5'	111°05'	II-9	0346	0400	344	0-115	366	366
147.25	23°46.5'	111°22'	II-9	0136	0151	607	0-154	132	132
147.30	23°37'	111°40'	II-8	2221	2236	463	0-130	302	302
147.35	23°23'	111°58'	II-8	1936	1950	536	0-119	86	86
147.40	23°14.5'	112°19'	II-8	1606	1620	630	0-125	38	38
150.19	23°24'	110°39'	II-7	2316	2331	456	0-135	241	241
150.25	23°13'	111°02'	II-8	0236	0251	446	0-141	139	139
150.30	23°05'	111°21'	II-8	0544	0558	277	0-130	58	58
150.40	22°40'	111°59'	II-8	1111	1126	546	0-125	51	51
153.16	22°55'	110°07'	II-7	1755	1810	586	0-125	338	338
153.20	22°48'	110°25'	II-7	1456	1511	458	0-137	244	244
153.30	22°36'	111°57'	II-7	1025	1040	438	0-151	110	110
153.40	22°15'	111°34'	II-7	0441	0456	642	0-131	87	62
153.50	21°50'	112°14'	II-6	2341	2356	471	0-135	55	55
153.60	21°26'	112°51'	II-6	1756	1810	632	0-125	32	32
157.20	22°14'	109°59'	II-5	1516	1531	494	0-123	162	162
157.30	21°52'	110°38'	II-5	2124	2139	454	0-129	194	194
157.40	21°32'	111°14'	II-6	0241	0256	720	0-143	56	56
157.50	21°12'	111°53'	II-6	0801	0816	461	0-134	26	26
157.60	20°52'	112°29'	II-6	1246	1301	298	0-134	27	27

Plankton Volumes, Cruise 5603, March 1956

80.51			Occupied. Sample lost.						
80.55	34°19'	120°48'	III-8	0021	0036	632	0-97	285	285
80.60	34°09'	121°09'	III-8	0310	0326	502	0-135	207	207
80.70	34°47'	121°51'	III-8	0851	0906	439	0-140	938	187
80.80	33°29'	122°32'	III-8	1341	1356	547	0-132	930	153

Position			(1956)	Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
Sta.	N.Lat.	W.long.	Date	Start	End	C.M.	in meters	Total cc.	Sm.org. cc.
80.90	33°09'	123°13'	III-8	1856	1911	457	0-137	462	133
82.47	34°15'	119°58'	III-10	0456	0511	637	0-94	320	78
83.40	34°13.3'	119°21.7'	III-10	0839	0842	141	0-12	163	163
83.43	34°08'	119°34'	III-10	1011	1025	493	0-137	199	81
83.51	33°52'	120°08.3'	III-10	0051	0105	494	0-132	348	348
83.60	33°34'	120°45'	III-9	1801	1816	485	0-144	372	372
83.70	33°14.5'	121°26'	III-9	1156	1210	483	0-131	85	85
83.80	32°54.5'	122°07'	III-9	0521	0536	458	0-142	421	116
83.90	32°34'	122°48'	III-8	2316	2331	504	0-132	151	151
87.36	33°47.5'	118°43.2'	III-10	1506	1521	512	0-126	111	111
87.40	33°40'	118°58.5'	III-10	1711	1725	437	0-140	373	78
87.50	33°20'	119°39.5'	III-12	0328	0336	296	0-66	1083	223
87.60	33°00'	120°25'	III-12	0756	0810	526	0-134	1369	133
87.70	32°39.5'	121°02'	III-12	1256	1310	487	0-135	1509	174
87.80	32°19.5'	121°43'	III-12	1716	1731	477	0-142	231	231
87.90	31°59'	122°24'	III-12	2156	2211	476	0-139	225	84
90.28	33°28.5'	117°46.7'	III-14	0713	0720	221	0-59	503	231
90.30	33°24.5'	117°55'	III-14	0601	0616	451	0-141	1512	115
90.37	33°11'	118°23.5'	III-14	0251	0305	484	0-137	1846	118
90.45	32°54.5'	118°55.5'	III-13	2321	2336	439	0-142	560	241
90.55	32°35'	119°37'	III-13	1821	1836	461	0-141	997	304
90.60	32°25'	119°57.5'	III-13	1556	1610	379	0-151	1974	549
90.70	32°05'	120°39'	III-13	1131	1146	473	0-142	1234	91
90.80	31°45'	121°19'	III-13	0651	0706	451	0-142	486	109
90.90	31°25'	121°59'	III-13	0221	0236	494	0-135	1105	154
93.27	32°56'	117°19.2'	III-14	1147	1157	308	0-89	172	120
93.30	32°50'	117°31.5'	III-14	1301	1316	341	0-140	146	146
93.40	32°30'	118°12.5'	III-14	1756	1810	514	0-141	851	113
93.50	32°10'	118°53.5'	III-14	2211	2225	328	0-139	6551	390
93.60	31°50'	119°34'	III-15	0301	0316	459	0-134	588	305
93.70	31°29'	120°14'	III-15	0751	0806	496	0-138	240	129
93.80	31°10'	120°55'	III-15	1211	1226	548	0-129	1844	201
93.90	30°50'	121°35'	III-15	1616	1630	473	0-136	307	116
97.30	32°15'	117°09'	III-17	2358	0005	220	0-48	163	163
97.32	32°11.5'	117°17'	III-16	2251	2306	462	0-138	761	112
97.40	31°55.5'	117°50'	III-16	1851	1906	278	0-141	835	835
97.50	31°35.5'	118°30.5'	III-16	1401	1415	473	0-140	70	70
97.60	31°15.5'	119°10.5'	III-16	0946	1001	472	0-138	280	89
97.70	30°58'	119°45'	III-16	0556	0611	460	0-141	219	161
97.80	30°37'	120°28'	III-16	0116	0131	493	0-140	118	118
97.90	30°15'	121°11'	III-15	2041	2055	512	0-136	96	96
100.29	31°42.2'	116°43.4'	III-17	0407	0418	333	0-100	306	306
100.33	31°34.5'	116°59'	III-17	0601	0616	472	0-143	152	152

Plankton Volumes, Cruise 5603, March 1956 (cont'd)

Position			(1956)	Time (PST)		Vol. water strained	Depth of haul	Vol.per 100 C.M.strained	
Sta.	N.Lat.	W.long.	Date	Start	End	C.M.	in meters	Total cc.	Sm.org. cc.
100.40	31°21'	117°27'	III-17	0901	0916	459	0-139	194	57
100.50	31°01'	118°07'	III-17	1326	1341	486	0-147	171	88
100.60	30°39'	118°50.2'	III-17	1756	1810	428	0-141	9985	182
100.70	30°18'	119°26'	III-17	2206	2220	488	0-137	1257	100
100.80	29°55'	120°05'	III-18	0231	0246	469	0-139	126	126
B100.90	29°31'	120°44'	III-18	0656	0711	444	0-133	137	70
S100.90	29°41.5'	120°44'	III-19	0746	0801	442	0-136	75	75
103.30	31°05.5'	116°25'	III-18	0139	0145	139	0-52	619	403
103.35	30°55.5'	116°44'	III-18	0401	0416	467	0-135	236	236
103.40	30°46'	117°04'	III-18	0611	0626	455	0-140	279	84
B103.50	30°25.5'	117°45.5'	III-19	0520	0536	450	0-132	980	136
S103.50	30°27'	117°44.5'	III-18	1011	1026	435	0-140	145	87
B103.60	30°06'	118°25.5'	III-19	0031	0045	395	0-148	66	66
S103.60	30°07'	118°25'	III-18	1431	1445	403	0-151	159	159
B103.70	29°37'	119°05.2'	III-18	1811	1826	471	0-141	253	76
S103.70	29°49.5'	119°05'	III-18	1846	1901	430	0-146	107	107
B103.80	29°26'	119°45.5'	III-18	1431	1445	433	0-142	113	113
S103.80	29°28'	119°44'	III-18	2306	2321	386	0-149	132	132
B103.90	29°06'	120°25'	III-18	1001	1015	462	0-138	39	39
S103.90	29°07'	120°23'	III-19	0321	0336	411	0-143	75	75
107.32	30°27'	116°12'	III-17	2101	2115	422	0-139	499	156
107.35	30°21.5'	116°24'	III-17	1926	1940	352	0-148	631	168
107.40	30°12'	116°45'	III-17	1706	1721	399	0-138	509	221
107.50	29°51.5'	117°25'	III-17	1216	1230	439	0-145	87	87
107.60	29°33'	118°01.5'	III-17	0846	0900	436	0-147	48	48
107.70	29°10.5'	118°45'	III-17	0336	0350	421	0-149	109	109
107.80	28°50'	119°25'	III-16	2321	2335	467	0-141	51	51
107.90	28°31'	119°58.5'	III-16	1941	1955	453	0-149	64	64
110.33	29°48.5'	115°52'	III-15	1348	1357	301	0-86	259	67
110.35	29°47'	116°00'	III-15	1531	1545	477	0-134	346	147
110.40	29°38'	116°19'	III-15	1806	1821	455	0-148	123	123
110.50	29°18.5'	117°01.5'	III-15	2216	2230	475	0-135	2715	118
110.60	29°00.5'	117°40.5'	III-16	0221	0236	481	0-134	1647	118
110.70	28°37'	118°19'	III-16	0701	0716	470	0-135	562	119
110.80	28°16.5'	118°59'	III-16	1111	1125	466	0-142	64	64
110.90	27°58'	119°35.5'	III-16	1506	1521	502	0-129	32	32
113.30	29°23'	115°19'	III-15	1019	1023	171	0-37	240	76
113.35	29°13'	115°39'	III-15	0741	0755	470	0-137	1919	34
113.40	29°01.5'	116°08.5'	III-15	0441	0456	428	0-151	70	70
113.45	28°52'	116°23.5'	III-15	0216	0231	460	0-148	89	89
113.50	28°42'	116°40.5'	III-15	0001	0016	472	0-142	381	106
113.55	28°32'	116°57.5'	III-14	2141	2155	319	0-140	1262	182
113.60	28°21'	117°15'	III-14	1926	1941	332	0-134	794	132

Plankton Volumes, Cruise 5603, March 1956 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 100 C.M. strained	
			(1956)					Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
113.70	27°58.5'	117°53'	III-14	1516	1531	409	0-150	227	93
113.80	27°40'	118°32'	III-14	1116	1130	397	0-145	357	106
117.26	28°55.5'	114°41'	III-12	0234	0241	229	0-63	754	689
117.30	28°48'	114°56'	III-12	0425	0431	201	0-59	952	877
117.35	28°38'	115°16'	III-12	0701	0715	488	0-130	385	150
117.40	28°28'	115°35.5'	III-13	1326	1341	514	0-129	2050	123
117.45	28°19'	115°56'	III-13	1556	1611	445	0-142	126	126
117.50	28°10'	116°17'	III-13	1816	1831	475	0-140	1270	114
117.55	28°01'	116°35.5'	III-13	2021	2036	426	0-144	1447	366
117.60	27°51.5'	116°56'	III-13	2251	2305	427	0-149	473	216
117.70	27°32.5'	117°36.5'	III-14	0311	0326	443	0-145	135	135
117.80	27°13.5'	118°15.5'	III-14	0741	0756	421	0-146	1049	38
118.39	28°18.5'	115°24'	III-13	1141	1156	505	0-132	396	178
119.33	28°19'	114°48'	III-11	1747	1758	370	0-96	659	470
120.25	28°23'	114°14.5'	III-11	2208	2215	327	0-64	2768	2768
120.30	28°11'	114°36'	III-11	1958	2006	231	0-74	575	575
120.40	27°52.5'	115°14'	III-11	1349	1353	137	0-32	736	736
120.45	27°39'	115°28.5'	III-11	1136	1151	359	0-140	1373	106
120.50	27°28.5'	115°49.5'	III-11	0928	0942	420	0-143	774	24
120.55	27°19'	116°10'	III-11	0726	0741	458	0-138	227	31
120.60	27°10'	116°30'	III-11	0511	0526	406	0-147	414	104
120.70	26°50.5'	117°09.5'	III-11	0056	0111	472	0-136	339	64
120.80	26°32'	117°49.5'	III-10	2046	2100	435	0-148	37	37
123.37	27°24'	114°40'	III-10	0213	0220	216	0-63	843	232
123.40	27°18'	114°51.5'	III-10	0341	0355	435	0-142	336	143
123.45	27°08'	115°11'	III-10	0616	0631	458	0-144	459	240
123.50	26°58'	115°30.5'	III-10	0836	0850	444	0-136	459	70
123.55	26°47.5'	115°50'	III-10	1056	1111	422	0-142	52	52
123.60	26°38.5'	116°10'	III-10	1256	1311	398	0-148	58	58
127.34	26°55.5'	114°06'	III-9	2138	2146	233	0-62	687	99
127.40	26°43.5'	114°29'	III-9	1856	1910	453	0-147	667	93
127.45	26°33'	114°49'	III-9	1626	1641	467	0-142	692	71
127.50	26°23'	115°07'	III-9	1346	1401	397	0-145	527	149
127.55	26°08'	115°30.5'	III-9	1056	1111	484	0-136	233	89
127.60	26°01.5'	115°45'	III-9	0826	0841	474	0-134	1174	99
130.30	26°25.5'	113°26.5'	III-8	1338	1345	236	0-59	47	47
130.35	26°19'	113°48'	III-8	1606	1621	474	0-143	441	61
130.40	26°09'	114°06.5'	III-8	1846	1900	466	0-144	570	45
130.45	25°59.5'	114°23.5'	III-8	2056	2111	417	0-150	926	158
130.50	25°50'	114°41.5'	III-8	2321	2337	501	0-143	76	76
130.60	25°31.5'	115°17'	III-9	0356	0411	458	0-148	240	52
133.25	26°04.5'	112°48'	III-7	0833	0840	214	0-71	314	314
133.30	25°53.5'	113°07'	III-7	0606	0621	514	0-129	179	179

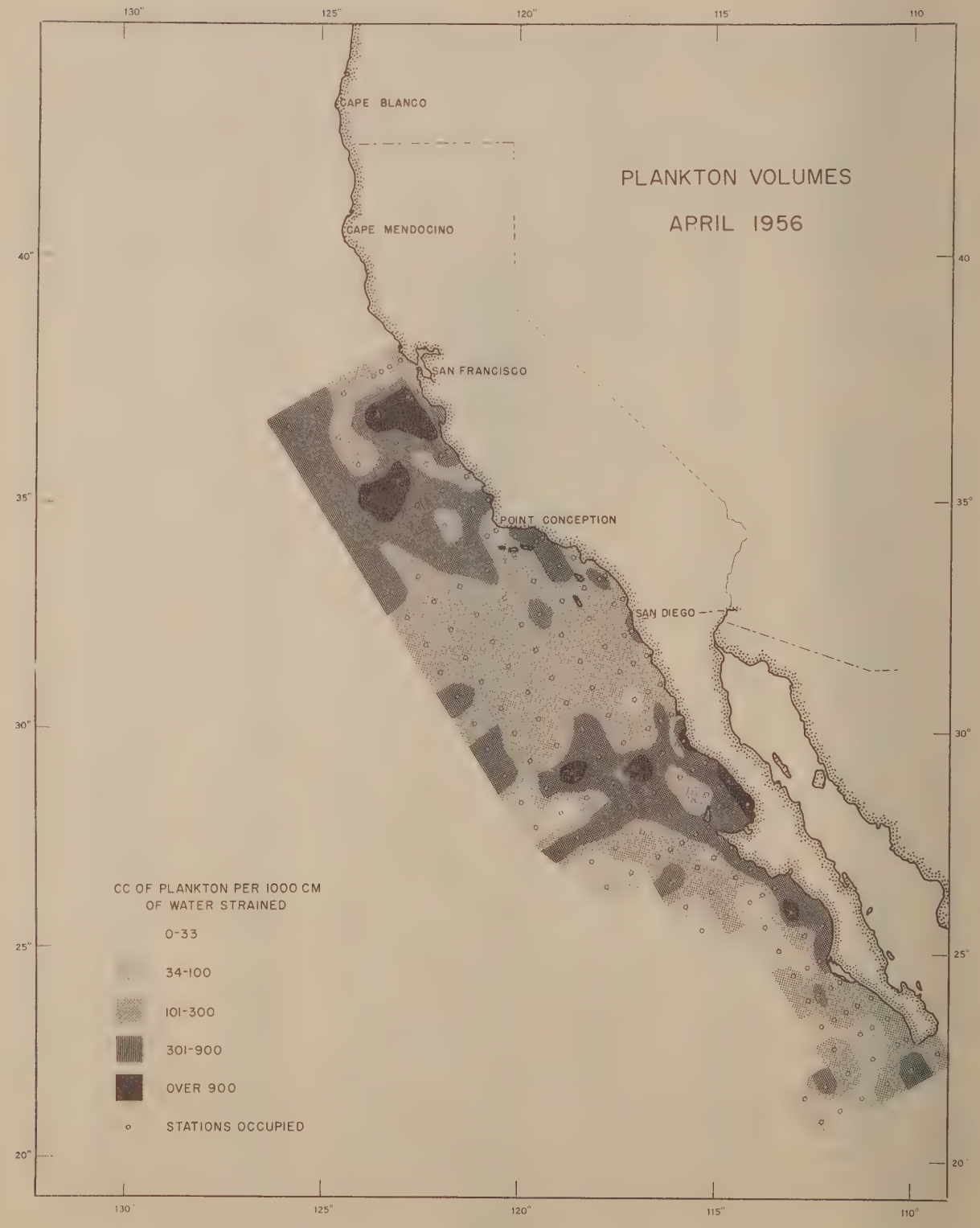
Plankton Volumes, Cruise 5603, March 1956 (cont'd)

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol. per 100 C.M. strained Total cc.	Sm.org. cc.
133.40	25°35'	113°46'	III-6	2326	2341	482	0-135	35	35
133.50	25°15'	114°27'	III-6	1631	1646	507	0-139	188	188
133.60	24°55.5'	114°58'	III-6	1051	1105	452	0-147	146	146
137.23	25°33.5'	112°20'	III-5	1223	1230	288	0-69	1113	1113
137.30	25°20.5'	112°45'	III-5	1511	1526	467	0-145	899	214
137.40	25°00'	113°24'	III-5	1926	1941	482	0-148	594	291
137.50	24°39.5'	114°01.5'	III-6	0006	0021	424	0-145	40	40
137.60	24°20'	114°38.5'	III-6	0446	0500	494	0-130	57	57

Plankton Volumes, Cruise 5604, April 1956

60.50	37°57.5'	122°53'	IV-8	1327	1331	121	0-41	198	198
60.55	37°47'	123°15'	IV-8	1558	1611	384	0-129	101	101
60.57	37°43.5'	123°24'	IV-8	1731	1746	472	0-145	333	78
60.60	37°37.5'	123°37'	IV-8	2011	2026	422	0-141	1754	168
60.70	37°17'	124°20.5'	IV-9	0340	0354	463	0-138	529	291
60.80	36°58.5'	125°00'	IV-9	1040	1054	596	0-104	1350	611
60.90	36°37'	125°47'	IV-9	1641	1655	410	0-139	1913	839
63.52	37°17.5'	122°36'	IV-10	1412	1424	448	0-106	194	194
63.55	37°11.5'	122°49'	IV-10	1228	1243	432	0-123	5579	4885
63.65	36°49.5'	123°31'	IV-10	0723	0738	417	0-133	2988	2544
63.80	36°21'	124°36'	IV-10	0011	0026	455	0-142	602	273
67.50	36°49.5'	122°05'	IV-10	1928	1936	232	0-73	621	621
67.55	36°39'	122°26'	IV-10	2213	2228	478	0-133	1305	1305
67.65	36°19'	123°09'	IV-11	0406	0420	388	0-140	635	413
67.80	35°48.5'	124°13.5'	IV-11	1221	1235	425	0-143	1606	254
70.52	36°08.5'	121°50.5'	IV-13	0311	0325	427	0-131	360	360
70.55	36°03.5'	122°01'	IV-13	0056	0110	494	0-117	843	438
70.60	35°53'	122°22'	IV-12	2141	2156	486	0-132	230	230
70.70	35°26'	123°20.5'	IV-12	1259	1314	382	0-149	8628	1027
70.80	35°14.5'	123°45'	IV-12	0928	0943	387	0-132	2735	1055
70.90	34°54'	124°26'	IV-12	0141	0155	436	0-140	1648	799
73.50	35°37'	121°17'	IV-13	0740	0750	275	0-90	448	120
73.60	35°18'	121°57'	IV-13	1141	1155	417	0-144	3618	671
73.70	34°58'	122°39'	IV-13	1626	1641	484	0-110	3414	504
77.50	35°04'	120°54.5'	IV-14	0546	0600	410	0-130	664	664
77.55	34°54.5'	121°16'	IV-14	0240	0255	484	0-116	339	339
77.65	34°35'	121°57'	IV-13	2134	2148	425	0-130	871	282
80.51	34°25.5'	120°32.5'	IV-14	1016	1031	490	0-115	1490	61
80.55	34°19'	120°48'	IV-14	1206	1221	432	0-140	345	113
80.60	34°08.5'	121°09'	IV-14	1442	1457	362	0-149	2003	403
80.70	33°48.5'	121°51'	IV-14	1956	2010	424	0-143	2200	477

Figure 5.--Plankton Volumes
April 1956



Plankton Volumes, Cruise 5604, April 1956 (cont'd)

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
80.80	33°29'	122°32'	IV-15	0056	0110	404	0-151	693	272
80.90	33°09'	123°13.5'	IV-15	0536	0551	390	0-142	467	467
82.47	34°15'	119°58'	IV-16	0956	1010	406	0-124	621	325
83.40	34°13.5'	119°21.5'	IV-17	1338	1341	122	0-9	392	392
83.43	34°08.5'	119°34.5'	IV-17	1141	1156	429	0-123	471	331
83.51	33°51.5'	120°08'	IV-16	0616	0629	362	0-104	141	141
83.55	33°42.5'	120°23.5'	IV-16	0403	0418	432	0-142	303	106
83.60	33°33.5'	120°45'	IV-16	0042	0056	414	0-141	1970	328
83.70	33°14'	121°25.5'	IV-15	1956	2010	382	0-154	531	186
83.80	32°54'	122°07.5'	IV-15	1511	1526	414	0-135	1196	109
83.90	32°34'	122°48'	IV-15	1024	1039	425	0-130	350	174
87.36	33°47.5'	118°43.5'	IV-17	1806	1821	418	0-137	1471	155
87.40	33°38.5'	118°58'	IV-17	2136	2151	397	0-142	827	449
87.50	33°20'	119°40'	IV-18	0234	0242	251	0-65	438	195
87.60	33°00'	120°22'	IV-18	0634	0649	363	0-138	535	287
87.70	32°40'	121°03'	IV-18	1126	1140	392	0-138	7146	255
87.80	32°20'	121°43'	IV-18	1626	1641	403	0-145	1098	179
87.90	32°00'	122°24'	IV-18	2051	2105	429	0-125	959	166
90.28	33°28'	117°46'	IV-20	1208	1216	315	0-61	232	232
90.30	33°24'	117°55.5'	IV-20	1016	1031	410	0-120	1303	352
90.37	33°10.5'	118°23'	IV-20	0621	0636	412	0-136	160	160
90.45	32°54.5'	118°55.5'	IV-20	0211	0226	442	0-121	428	274
90.55	32°34.5'	119°37'	IV-19	2045	2100	329	0-142	842	584
90.60	32°24.5'	119°57.5'	IV-19	1747	1802	380	0-151	613	258
90.70	32°04.5'	120°38'	IV-19	1226	1241	404	0-143	510	287
90.80	31°44'	121°19.5'	IV-19	0631	0646	426	0-133	547	148
90.90	31°25'	121°58.5'	IV-19	0134	0149	397	0-143	1399	164
93.27	32°55.5'	117°20'	IV-20	1601	1615	420	0-128	295	295
93.30	32°50'	117°31.5'	IV-20	1726	1741	441	0-132	140	140
93.40	32°30'	118°13'	IV-20	2139	2153	383	0-142	1132	165
93.50	32°10'	118°53'	IV-21	0211	0226	376	0-149	433	247
93.60	31°50'	119°34'	IV-21	0656	0711	428	0-131	2306	159
93.70	31°30'	120°14'	IV-21	1136	1150	405	0-137	1571	141
93.80	31°09'	120°51'	IV-21	1716	1731	422	0-121	2024	277
93.90	30°45.5'	121°32'	IV-21	2318	2332	335	0-155	508	344
97.30	32°16'	117°09'	IV-23	1344	1349	160	0-47	330	330
97.32	32°13'	117°22'	IV-23	1123	1138	416	0-121	349	144
97.40	31°55.5'	117°53.5'	IV-23	0711	0725	386	0-139	365	158
97.50	31°34.5'	118°32'	IV-23	0256	0311	379	0-137	2174	195
97.60	31°15'	119°10.5'	IV-22	2132	2146	443	0-125	6807	262
97.70	30°46.5'	119°38.5'	IV-22	1601	1616	358	0-140	1093	199
97.80	30°34'	120°22.5'	IV-22	1011	1026	368	0-155	899	234
97.90	30°15'	121°12'	IV-22	0501	0515	412	0-132	954	202

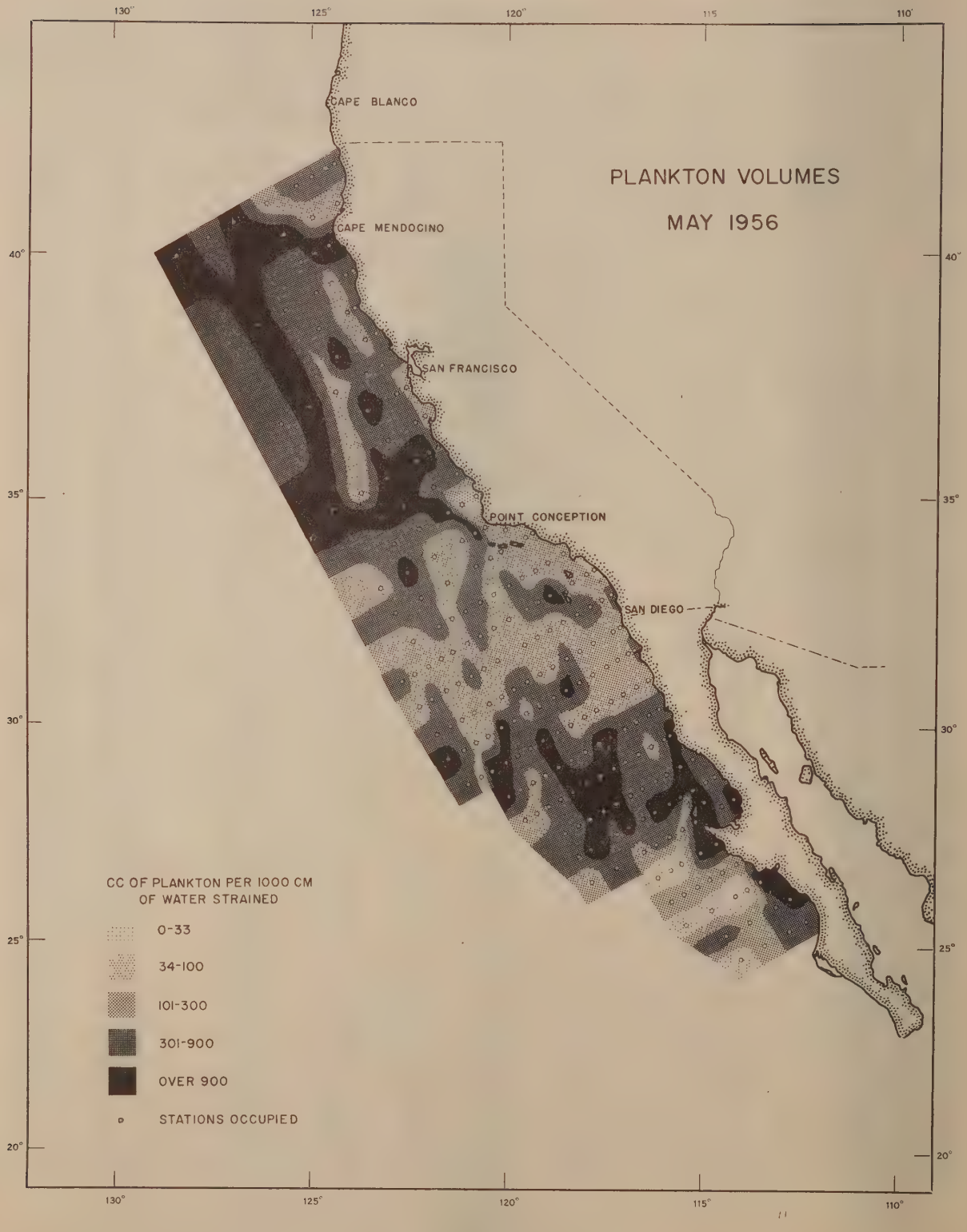
Plankton Volumes, Cruise 5604, April 1956 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1956)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
100.29	31°42'	116°43'	IV-23	1741	1756	409	0-139	279	279
100.33	31°35'	116°59'	IV-23	1936	1951	418	0-135	246	246
100.40	31°20.5'	117°26.5'	IV-23	2317	2332	408	0-138	243	243
100.50	31°00.5'	118°08'	IV-24	0421	0436	413	0-137	3311	162
100.60	30°40.5'	118°47'	IV-24	0906	0921	403	0-139	1201	258
100.70	30°21'	119°27'	IV-24	1406	1420	486	0-126	498	222
100.80	30°00'	120°09'	IV-24	1956	2011	377	0-140	165	165
100.90	29°41'	120°46'	IV-25	0131	0146	429	0-137	462	462
103.30	31°07'	116°28'	IV-26	1338	1346	267	0-59	146	146
103.35	30°59'	116°47'	IV-26	1046	1100	404	0-138	109	109
103.40	30°47'	117°11'	IV-26	0756	0811	402	0-134	92	92
103.50	30°29.5'	117°46'	IV-26	0231	0246	423	0-134	6272	125
103.60	30°08.5'	118°25'	IV-25	2120	2135	413	0-141	421	397
103.70	29°47.5'	119°04.5'	IV-25	1556	1611	411	0-121	256	256
103.80	29°28.5'	119°43'	IV-25	1116	1130	413	0-135	240	240
103.90	29°07'	120°23'	IV-25	0641	0656	422	0-133	797	797
107.32	30°25.9'	116°11'	IV-26	1736	1751	511	0-129	182	182
107.35	30°20.3'	116°22.6'	IV-26	1606	1621	494	0-128	631	469
107.40	30°12'	116°44'	IV-26	1306	1321	446	0-147	3814	195
107.50	29°53.6'	117°23'	IV-26	0811	0825	514	0-115	2838	115
107.60	29°32'	118°01.5'	IV-26	0221	0236	490	0-120	481	481
107.70	29°12'	118°42.5'	IV-25	2231	2246	502	0-130	1037	1037
107.80	28°52'	119°22'	IV-25	1731	1746	553	0-125	434	434
107.90	28°32'	119°55.5'	IV-25	1256	1310	459	0-139	89	89
110.33	29°50.5'	115°52.5'	IV-24	0058	0106	223	0-73	1723	1723
110.35	29°45.2'	116°00'	IV-24	0311	0326	412	0-123	245	245
110.40	29°36.5'	116°20.5'	IV-24	0621	0636	445	0-124	4425	539
110.50	29°19'	117°00'	IV-24	1011	1026	462	0-119	953	953
110.60	28°57'	117°38.5'	IV-24	1611	1626	487	0-127	651	651
110.70	28°37'	118°20'	IV-24	2126	2141	545	0-112	213	213
110.80	28°15.2'	118°56.5'	IV-25	0221	0236	509	0-123	1357	33
110.90	27°53'	119°34'	IV-25	0721	0736	555	0-117	139	47
113.30	29°21'	115°16.2'	IV-23	1945	1952	154	0-50	514	514
113.35	29°18'	115°41'	IV-23	1710	1725	439	0-125	688	301
113.40	29°12'	116°07'	IV-23	1356	1411	515	0-125	124	124
113.50	28°54'	116°37'	IV-23	0956	1011	578	0-107	772	616
113.60	28°28'	117°18'	IV-23	0430	0445	501	0-136	559	559
113.70	28°03'	117°55.5'	IV-22	2310	2325	480	0-137	725	725
113.80	27°37'	118°33.1'	IV-22	1741	1756	558	0-122	459	459
117.26	28°55.8'	114°40.8'	IV-20	2313	2320	269	0-51	1217	1217
117.30	28°48'	114°56.5'	IV-21	0107	0117	278	0-35	988	420
117.35	28°37.8'	115°16.2'	IV-21	0325	0340	528	0-137	697	280
117.40	28°26.2'	115°35'	IV-21	1621	1635	514	0-137	206	111

Plankton Volumes, Cruise 5604, April 1956 (cont'd)

Position			(1956)	Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
								Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
117.50	28°07.8'	116°15'	IV-21	2131	2146	438	0-120	959	525
117.60	27°47.5'	116°56'	IV-22	0325	0340	330	0-120	973	190
117.70	27°24.2'	117°39.5'	IV-22	0810	0825	422	0-151	256	256
117.80	27°06'	118°11.5'	IV-22	1126	1140	472	0-142	89	89
118.39			Occupied. Sample not quantitative						
119.33	28°18'	114°53.4'	IV-20	1342	1353	386	0-97	435	435
120.25	28°23.3'	114°14.4'	IV-20	1835	1840	160	0-44	1785	1785
120.30	28°13.2'	114°34.7'	IV-20	1602	1612	250	0-94	668	668
120.40	27°53'	115°14'	IV-20	1014	1019	161	0-37	609	609
120.45	27°44.1'	115°32.8'	IV-19	2145	2200	434	0-146	696	341
120.50	27°31.5'	115°52.5'	IV-19	1635	1650	433	0-134	319	256
120.55	27°23'	116°12'	IV-19	1326	1341	576	0-123	135	135
120.60	27°19'	116°29.5'	IV-19	1016	1030	425	0-155	437	143
120.70	26°53.5'	117°09.5'	IV-19	0440	0455	501	0-130	72	62
120.80	26°33'	117°48.9'	IV-18	2245	2300	485	0-135	41	41
123.37	27°23.1'	114°40.2'	IV-17	2038	2045	278	0-52	403	403
123.40	27°18.5'	114°51.2'	IV-17	2223	2231	275	0-66	995	341
123.42	27°14'	114°59.2'	IV-17	0015	0030	559	0-119	506	77
123.50	26°55.5'	115°33'	IV-18	0436	0450	501	0-128	433	288
123.60	26°39'	116°07.5'	IV-18	1036	1051	516	0-132	879	345
127.34	26°55.5'	114°06'	IV-17	1608	1615	226	0-85	616	616
127.40	26°44'	114°29.5'	IV-17	1316	1331	449	0-136	214	214
127.50	26°20'	115°12'	IV-17	0715	0730	476	0-131	369	248
127.60	26°03.5'	115°48'	IV-17	0045	0100	440	0-147	93	36
130.30	26°28.5'	113°23.5'	IV-16	0243	0251	190	0-68	707	707
130.35	26°16'	113°47'	IV-16	0540	0555	491	0-140	81	81
130.40	26°07.5'	114°06.5'	IV-16	0835	0850	484	0-138	23	23
130.50	25°49'	114°44'	IV-16	1356	1411	474	0-133	186	169
130.60	25°26'	115°25'	IV-16	1926	1940	480	0-135	29	29
133.25	26°04.2'	112°48.8'	IV-15	2200	2207	247	0-70	1513	702
133.30	25°59.2'	113°10'	IV-15	1915	1930	460	0-152	1053	1053
133.40	25°35.4'	113°49.9'	IV-15	1320	1335	480	0-139	42	42
137.23	25°34'	112°16.6'	IV-14	2150	2155	188	0-46	1701	638
137.30	25°19.6'	112°44'	IV-15	0206	0221	452	0-131	288	288
137.40	25°00.4'	113°23.6'	IV-15	0716	0731	459	0-146	65	65
140.30	24°47.2'	112°26.2'	IV-14	1635	1642	276	0-79	594	594
140.35	24°37'	112°44.2'	IV-14	1356	1411	508	0-113	89	75
140.40	24°24.5'	113°04'	IV-14	1041	1056	492	0-133	150	150
143.26	24°19'	111°48'	IV-12	1843	1850	264	0-73	1012	235
143.30	24°10.8'	112°03.2'	IV-13	2041	2056	510	0-128	1715	200
143.35	24°01.2'	112°21.8'	IV-13	2350	0005	537	0-138	322	322
143.40	23°50.5'	112°46.1'	IV-14	0350	0405	534	0-119	241	122
147.20	23°56.2'	111°04'	IV-12	1330	1345	449	0-142	361	194

Figure 6.—Plankton Volumes
May 1956



Plankton Volumes, Cruise 5604, April 1956 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
Sta.	N.lat.	W.long.	(1956) Date	Start	End	C.M.	in meters	Total cc.	Sm.org. cc.
147.25	23°48.8'	111°19.8'	IV-12	1110	1125	520	0-124	221	221
147.30	23°36.5'	111°42.5'	IV-12	0741	0756	492	0-134	120	120
147.35	23°26'	112°03.8'	IV-12	0411	0426	526	0-140	253	253
147.40	23°15'	112°21.2'	IV-11	2350	0005	572	0-110	68	54
150.19	23°23.2'	110°42.8'	IV-11	0515	0530	514	0-134	260	260
150.25	23°12.6'	111°02'	IV-11	0826	0841	493	0-129	81	81
150.30	23°04.5'	111°18.8'	IV-11	1146	1201	534	0-112	94	94
150.40	22°40.8'	111°55.2'	IV-11	1742	1757	452	0-155	208	208
153.16	22°54.5'	110°07'	IV-10	2245	2300	503	0-135	248	199
153.20	22°48.5'	110°22'	IV-10	2006	2021	519	0-132	283	235
153.30	22°28'	110°59'	IV-10	1416	1431	468	0-145	68	68
153.40	22°05'	111°36.2'	IV-10	0818	0833	488	0-149	102	102
153.50	21°46'	112°13'	IV-10	0241	0256	539	0-115	334	334
153.60	21°26'	112°50.6'	IV-9	2141	2155	495	0-145	83	69
157.20	22°17.5'	110°01'	IV-8	1806	1820	446	0-138	583	471
157.30	21°52'	110°38'	IV-8	2341	2356	479	0-116	271	271
157.40	21°31'	111°12'	IV-9	0501	0516	532	0-133	90	90
157.50	21°10'	111°52'	IV-9	1005	1020	406	0-143	32	32
157.60	20°54'	112°30.5'	IV-9	1616	1631	465	0-138	60	52

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40.38	41°46.6'	124°30.5'	V-13	2316	2331	447	0-136	340	340
40.40	41°43.1'	124°37.8'	V-14	0016	0030	450	0-135	480	480
40.45	41°35'	125°02'	V-14	0246	0301	481	0-112	599	470
40.50	41°21'	125°37'	V-14	0516	0531	462	0-130	1123	420
40.60	41°07'	126°10.5'	V-14	0836	0850	438	0-130	1076	288
40.70	40°47'	127°01'	V-14	1251	1306	495	0-114	1132	1132
40.80	40°26'	127°41'	V-14	1641	1656	466	0-137	498	498
40.90	40°06'	128°29'	V-14	2121	2136	450	0-123	2641	2452
43.42	41°03.7'	124°21.7'	V-13	1746	1801	410	0-145	264	178
43.50	40°47'	124°59.8'	V-13	1356	1411	517	0-118	232	232
43.60	40°24'	125°44'	V-13	0926	0941	390	0-136	2871	2871
47.50	40°14'	124°32.2'	V-13	0026	0040	375	0-152	1920	1173
47.55	40°04.4'	124°54.8'	V-13	0306	0321	552	0-102	1116	986
47.60	40°06'	125°18'	V-13	0541	0556	425	0-138	881	622
50.47	39°46'	123°53.8'	V-12	1803	1811	245	0-69	392	392
50.50	39°40'	124°08.1'	V-16	0526	0541	447	0-130	1297	770
50.55	39°25'	124°31'	V-16	0216	0231	452	0-140	1796	199
50.60	39°16.7'	124°54'	V-15	2341	2356	385	0-150	999	519
50.70	39°04'	125°34'	V-15	1936	1951	538	0-112	1460	624
50.80	38°40'	126°21.5'	V-15	1451	1506	428	0-138	1029	1029

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
50.90	38°21'	127°07'	V-15	0946	1000	424	0-142	548	548
53.52	39°00.8'	123°52.1'	V-12	1047	1058	299	0-118	341	341
53.55	38°57'	124°03.5'	V-12	0911	0926	446	0-139	394	291
53.65	38°32'	124°58'	V-12	0336	0351	461	0-127	824	503
57.51	38°30'	123°22'	V-10	0528	0537	264	0-86	390	390
57.55	38°22'	123°39.5'	V-11	1801	1816	467	0-131	379	265
57.65	37°59'	124°29'	V-11	2241	2256	412	0-129	1222	931
60.55	37°47.2'	123°17.5'	V-10	0026	0041	431	0-141	1215	798
60.60	37°37'	123°42.5'	V-9	2206	2221	456	0-131	704	606
60.70	37°17'	124°26.5'	V-9	1711	1726	474	0-123	513	253
60.80	37°01'	125°07'	V-9	1246	1301	476	0-120	1527	1396
60.90	36°36'	125°56'	V-9	0806	0821	349	0-136	1089	401
63.52	37°18.7'	122°36.8'	V-8	1501	1516	499	0-94	158	158
63.55	37°12.6'	122°49.6'	V-8	1646	1701	459	0-118	825	802
63.65	36°52'	123°31'	V-8	2116	2131	435	0-149	3234	3050
67.50	36°49'	122°04.5'	V-8	1027	1036	234	0-73	436	154
67.55	36°39'	122°26'	V-8	0756	0810	420	0-134	533	476
67.65	36°19'	123°09'	V-8	0341	0356	579	0-97	1055	387
70.52	36°08.5'	121°50'	V-7	0056	0111	500	0-106	436	360
70.55	36°03.5'	122°03'	V-7	0226	0241	458	0-122	4010	3912
70.60	35°54'	122°29.5'	V-7	0441	0456	435	0-151	2353	2208
70.70	35°33.5'	123°06'	V-7	0851	0906	304	0-138	6281	5952
70.80	35°12'	123°47'	V-7	1301	1316	458	0-119	802	245
70.90	34°54'	124°30'	V-7	1706	1721	395	0-126	4852	4493
73.50	35°37.2'	121°17'	V-6	2026	2040	475	0-125	657	657
73.60	35°21'	121°58.5'	V-6	1556	1611	493	0-129	665	584
73.70	34°56.5'	122°41'	V-6	1151	1206	524	0-106	1778	1465
73.80	34°37.5'	123°21.5'	V-6	0746	0801	366	0-133	2172	1934
77.50	35°04'	120°52'	V-5	1407	1419	424	0-107	71	71
77.55	34°53.8'	121°13.5'	V-5	1647	1702	446	0-130	760	87
77.60	34°44.5'	121°34'	V-5	1902	1917	480	0-127	2451	2101
77.70	34°25.1'	122°17'	V-5	2316	2331	292	0-130	1348	418
77.80	34°05'	123°03'	V-6	0341	0356	358	0-107	1201	737
80.51	34°26.5'	120°32.5'	V-6	0442	0453	466	0-98	455	144
80.55	34°19'	120°48'	V-6	0711	0726	513	0-134	1501	1062
80.60	34°12.8'	121°10.5'	V-6	0916	0928	448	0-139	626	112
80.70	33°49'	121°51'	V-6	1421	1436	495	0-133	720	135
80.80	33°28.5'	122°31'	V-6	1941	1956	443	0-142	1434	1084
80.90	33°05.5'	123°10'	V-7	0013	0027	490	0-141	1880	186
82.47	34°15'	119°58'	V-8	0356	0410	532	0-131	643	211
83.40	34°13.5'	119°22'	V-8	0824	0827	124	0-17	234	234
83.43	34°07.5'	119°34.5'	V-8	0626	0701	400	0-144	247	247
83.51	33°51.5'	120°08'	V-8	0026	0040	468	0-136	173	173

Plankton Volumes, Cruise 5605, May 1956 (cont'd)

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
83.55	33°43.5'	120°24'	V-7	2206	2220	488	0-137	426	190
83.60	33°33'	120°39.5'	V-7	1936	1951	401	0-127	3329	349
83.70	33°14'	121°26'	V-7	1446	1500	542	0-131	4966	166
83.80	33°48'	122°07.5'	V-7	0936	0950	493	0-135	2151	528
83.90	32°32'	122°40'	V-7	0516	0531	448	0-143	872	402
87.36	33°48'	118°42'	V-8	1321	1335	527	0-134	150	150
87.40	33°39'	118°59'	V-9	0511	0525	410	0-149	834	224
87.45	33°30'	119°19'	V-9	0806	0820	460	0-140	354	115
87.50	33°20'	119°40'	V-9	1126	1134	302	0-61	292	292
87.55	33°10'	120°00.5'	V-9	1406	1420	438	0-148	1017	832
87.60	32°59'	120°22'	V-9	1726	1741	522	0-125	2953	86
87.65	32°47'	120°42'	V-9	2110	2125	503	0-136	9553	318
87.70	32°36'	121°09'	V-10	0006	0021	547	0-133	1830	329
87.75	32°26'	121°34.5'	V-10	0304	0318	559	0-115	948	186
87.80	32°16'	121°58'	V-10	0610	0625	466	0-143	7481	307
87.90	32°06'	122°23.5'	V-10	0851	0905	501	0-138	417	148
90.28	33°28.5'	117°45.5'	V-12	0934	0938	148	0-31	88	88
90.30	33°24'	117°54.5'	V-12	0811	0826	447	0-141	1915	208
90.37	33°11'	118°23.5'	V-12	0450	0504	476	0-127	515	189
90.45	32°54.5'	118°56'	V-12	0056	0110	369	0-154	1783	1539
90.50	32°44.5'	119°16.5'	V-11	2156	2211	559	0-128	2094	311
90.55	32°31'	119°38'	V-11	1806	1820	371	0-134	668	668
90.60	32°21'	119°56'	V-11	1512	1526	454	0-142	536	238
90.65	32°14'	120°18'	V-11	1211	1226	547	0-130	561	122
90.70	32°04'	120°39'	V-11	0940	0955	464	0-142	794	384
90.75	31°52.5'	121°02'	V-11	0616	0630	448	0-144	272	183
90.80	31°42.5'	121°23'	V-11	0336	0351	544	0-130	147	147
90.85	31°33.5'	121°42'	V-11	0101	0116	566	0-112	15032	276
90.90	31°25'	121°59'	V-10	2228	2242	457	0-147	2561	219
90.95	31°12'	122°21'	V-10	1926	1940	448	0-143	535	223
90.100	31°03.5'	122°40'	V-10	1646	1700	536	0-121	2849	582
93.27	32°55.5'	117°19'	V-12	1858	1906	305	0-85	786	786
93.30	32°50'	117°31.5'	V-12	2056	2111	468	0-141	894	231
93.35	32°40'	117°51.5'	V-12	2334	2348	459	0-142	479	308
93.40	32°30'	118°12'	V-13	0211	0226	566	0-107	1830	381
93.45	32°19'	118°33'	V-13	0436	0450	474	0-134	1495	179
93.50	32°09'	118°53'	V-13	0711	0725	419	0-148	525	191
93.55	31°59'	119°14.5'	V-13	0946	1000	508	0-118	236	236
93.60	31°49.5'	119°34'	V-13	1255	1309	424	0-146	504	139
93.70	31°34'	120°07'	V-16	0231	0245	499	0-140	1440	196
93.75	31°24'	120°28'	V-16	0506	0521	431	0-146	2302	250
93.80	31°19'	120°51'	V-16	0751	0805	462	0-144	3112	368
93.85	31°03'	121°17'	V-16	1041	1056	468	0-139	186	186
93.90	30°50'	121°34.5'	V-16	1323	1338	440	0-145	243	243

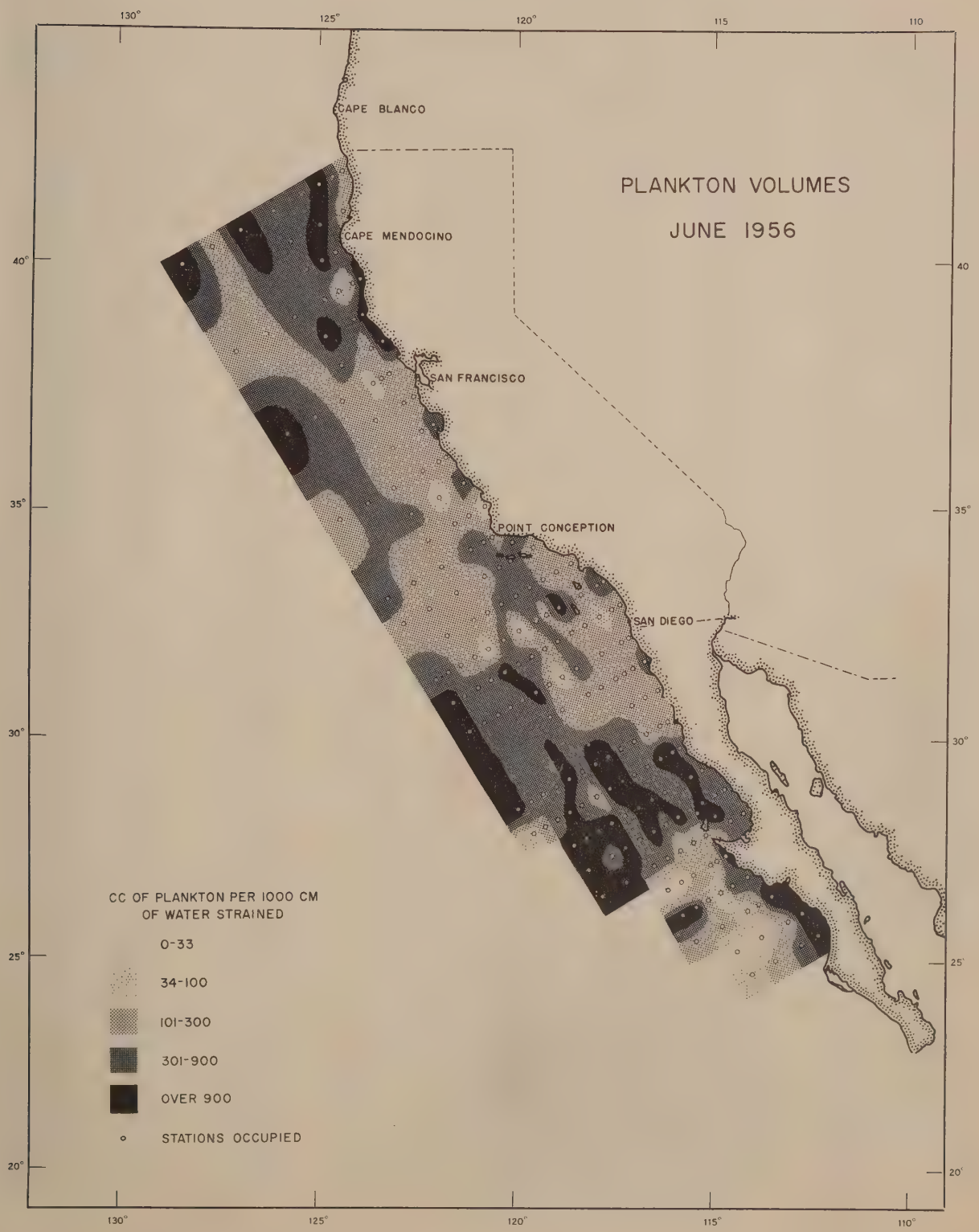
Position				Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
			(1956)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
93.95	30°40.5'	121°55'	V-16	1600	1615	451	0-146	1029	342
93.100	30°30'	122°14.5'	V-16	1851	1906	562	0-112	2264	165
97.30	32°15.4'	117°09'	V-18	1500	1505	197	0-47	163	163
97.32	32°11.5'	117°17'	V-18	1344	1358	463	0-161	177	177
97.40	31°55.5'	117°50'	V-18	0928	0942	445	0-151	171	171
97.45	31°43'	118°10'	V-18	0641	0655	367	0-141	174	174
97.50	31°38'	118°33'	V-18	0301	0315	405	0-155	1481	620
97.55	31°26'	118°53'	V-18	0006	0020	386	0-148	749	192
97.60	31°15.5'	119°10.5'	V-17	2132	2146	463	0-148	543	294
97.65	31°08'	119°25'	V-17	1931	1946	508	0-133	5127	364
97.70	30°55'	119°51'	V-17	1611	1625	456	0-141	520	520
97.75	30°45'	120°11'	V-17	1331	1345	464	0-146	172	172
97.80	30°34.5'	120°30'	V-17	1041	1055	490	0-148	2752	204
97.85	30°25'	120°51'	V-17	0811	0825	494	0-142	1370	261
97.90	30°15'	121°11'	V-17	0504	0518	458	0-143	4414	279
97.95	30°05'	121°30.5'	V-17	0224	0238	453	0-144	2769	616
97.100	29°54.5'	121°51'	V-16	2346	2400	409	0-148	629	445
100.29	31°42.2'	116°43.4'	V-18	1916	1930	489	0-137	380	380
100.30	31°40.5'	116°46.5'	V-18	2006	2020	463	0-150	209	209
100.35	31°30.2'	117°07'	V-18	2236	2250	460	0-141	117	117
100.40	31°22'	117°27'	V-19	0118	0132	515	0-141	264	264
100.45	31°15'	117°46'	V-19	0351	0405	480	0-145	262	262
100.50	30°58.5'	118°11.5'	V-19	0701	0716	564	0-133	1756	798
100.55	30°49.5'	118°27.5'	V-19	0921	0935	471	0-136	2895	1676
100.60	30°40.5'	118°48'	V-19	1246	1301	469	0-142	892	363
100.65	30°30'	119°08'	V-19	1556	1611	466	0-143	406	406
100.70	30°20'	119°28'	V-19	1856	1911	468	0-140	787	233
100.75	30°10'	119°48'	V-19	2332	2346	457	0-139	306	306
100.80	30°00'	120°08'	V-20	0216	0231	498	0-114	4239	4239
100.85	29°49'	120°26.5'	V-20	0506	0520	438	0-142	171	171
100.90	29°39'	120°46.5'	V-20	0751	0806	499	0-132	1512	295
100.95	29°28'	121°07'	V-20	1036	1050	390	0-155	513	513
100.100	29°20'	121°26.5'	V-20	1302	1316	558	0-124	976	976
103.30	31°05'	116°26'	V-19	1213	1220	118	0-68	195	195
103.35	30°57'	116°45'	V-19	1421	1435	288	0-137	191	191
103.40	30°47'	117°05.5'	V-19	1631	1646	476	0-143	176	176
103.45	30°37.5'	117°26'	V-19	1856	1911	482	0-141	147	147
103.50	30°29'	117°45'	V-19	2111	2126	469	0-147	145	145
103.55	30°19	118°06.5'	V-19	2336	2351	455	0-143	152	152
103.60	31°10.5'	118°25'	V-20	0146	0200	465	0-142	226	226
103.65	29°56'	118°34'	V-21	1321	1335	471	0-128	3493	471
103.70	29°47'	119°05'	V-21	1046	1100	438	0-131	2301	1121
103.75	29°34'	119°31'	V-21	0716	0730	486	0-134	514	514
103.80	29°24'	119°51'	V-21	0427	0442	466	0-145	881	881

Plankton Volumes, Cruise 5605, May 1956 (cont'd)

Position			(1956)	Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
								Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
103.85	29°14'	120°10'	V-21	0146	0200	502	0-128	1322	1203
103.90	29°04.5'	120°27'	V-20	2311	2326	470	0-135	932	932
103.95	28°57'	120°44'	V-20	2036	2051	513	0-124	234	234
103.100	28°46'	121°03'	V-20	1751	1806	487	0-146	573	398
107.32	30°26'	116°11'	V-19	0756	0811	291	0-137	522	522
107.35	30°20'	116°23'	V-19	0621	0636	292	0-142	616	616
107.40	30°10'	116°43'	V-19	0336	0351	284	0-133	1773	892
107.45	30°00'	117°35'	V-19	0106	0121	242	0-141	815	438
107.50	29°50'	117°23.5'	V-18	2236	2251	250	0-137	2327	1125
107.55	29°41'	117°42'	V-18	2006	2021	227	0-136	2021	1050
107.60	29°32'	118°02'	V-18	1736	1751	210	0-144	2089	563
107.65	29°22'	118°21.5'	V-18	1451	1506	257	0-136	770	770
107.70	29°11.5'	118°41'	V-18	1231	1246	264	0-144	925	925
107.75	29°02.5'	119°01'	V-18	1011	1026	248	0-141	1198	795
107.80	28°52'	119°20'	V-18	0751	0806	266	0-142	1073	245
107.85	28°39'	119°37.5'	V-18	0521	0536	256	0-150	735	375
107.90	28°30'	119°57'	V-18	0311	0325	278	0-136	1103	1103
110.33	29°50'	115°53.5'	V-16	1917	1928	177	0-105	1830	1830
110.35	29°47'	116°00'	V-16	2021	2036	264	0-132	439	439
110.40	29°37'	116°19.5'	V-16	2241	2256	278	0-139	1099	287
110.45	29°24'	116°38'	V-17	0106	0120	286	0-143	1546	742
110.50	29°13.5'	116°56'	V-17	0326	0340	274	0-130	2225	818
110.55	29°07'	117°20'	V-17	0546	0601	235	0-146	2039	2039
110.60	28°56'	117°39'	V-17	0806	0821	250	0-142	1473	1473
110.65	28°46'	117°58'	V-17	1026	1041	198	0-141	1197	1197
110.70	28°38'	118°15'	V-17	1256	1310	254	0-134	2554	2554
110.75	28°27'	118°37.5'	V-17	1541	1556	243	0-147	539	539
110.80	28°17'	118°56'	V-17	1806	1821	270	0-144	1009	675
110.85	28°07'	119°16'	V-17	2026	2041	278	0-130	122	122
110.90	27°56'	119°35'	V-17	2241	2256	286	0-142	213	213
113.30	29°23'	115°18'	V-16	1439	1444	90	0-42	711	711
113.35	29°08'	115°35'	V-16	1211	1226	252	0-134	914	914
113.40	28°58'	115°57.5'	V-16	0936	0951	243	0-136	6637	396
113.45	28°49'	116°18'	V-16	0706	0721	260	0-130	577	427
113.50	28°42'	116°37'	V-16	0426	0441	289	0-143	622	622
113.55	28°32'	116°57'	V-16	0156	0211	294	0-135	511	511
113.60	28°22'	117°16'	V-15	2331	2346	249	0-131	1699	1639
113.65	28°12'	117°35'	V-15	2056	2111	243	0-140	1308	1218
113.70	28°02'	117°56'	V-15	1816	1831	473	0-119	1336	1336
113.75	27°50'	118°12.5'	V-15	1551	1606	259	0-142	703	703
113.80	27°42.5'	118°34'	V-15	1346	1400	345	0-138	704	704
117.26	28°56'	114°41'	V-14	0518	0525	173	0-69	1742	833
117.30	28°48'	114°58'	V-14	0708	0717	184	0-82	835	835
117.35	28°38'	115°16'	V-14	0916	0931	468	0-132	1265	1265

Position			(1956)	Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
								Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
117.40	28°28'	115°35.5'	V-14	1316	1331	445	0-138	1509	1509
117.45	28°18'	115°55'	V-14	1531	1546	401	0-143	1777	1777
117.50	28°10'	116°16'	V-14	1741	1756	405	0-144	928	928
117.55	28°02'	116°37'	V-14	2001	2015	339	0-140	543	543
117.60	27°54'	116°57'	V-14	2216	2231	332	0-143	1562	1396
117.65	27°46'	117°18'	V-15	0026	0040	326	0-152	492	492
117.70	27°38'	117°38.5'	V-15	0311	0325	336	0-138	1998	1998
117.75	27°28'	117°59'	V-15	0526	0541	320	0-122	1425	1425
117.80	27°12'	118°12'	V-15	0741	0756	372	0-147	448	448
118.39	28°18.5'	115°24'	V-14	1136	1150	272	0-139	269	269
119.33	28°19'	114°53'	V-13	2057	2109	249	0-109	1447	1447
120.25	28°22.5'	114°14'	V-14	0129	0134	147	0-46	1252	1252
120.30	28°13'	114°34'	V-13	2258	2307	226	0-80	1900	583
120.40	27°53'	115°13.5'	V-12	0427	0430	155	0-26	1345	1345
120.45	27°43	115°33'	V-12	0156	0210	426	0-152	340	300
120.50	27°33'	115°52.5'	V-11	2321	2336	465	0-140	1063	732
120.55	27°23'	116°11.5'	V-11	2011	2026	462	0-138	1256	606
120.60	27°13'	116°31.5'	V-11	1731	1746	420	0-147	207	207
120.70	27°00'	117°11'	V-11	1236	1250	476	0-139	325	325
120.80	26°39'	117°52'	V-11	0746	0801	489	0-131	299	299
123.37	27°24'	114°40'	V-10	0813	0820	245	0-62	2447	2447
123.42	27°14'	114°59.5'	V-10	1031	1046	497	0-122	926	926
123.50	26°57'	115°31'	V-10	1401	1416	445	0-136	36	36
123.55	26°47'	115°51.5'	V-10	1621	1636	424	0-139	24	24
123.60	26°37'	116°09.5'	V-10	1946	2001	424	0-145	99	40
127.34	26°55.5'	114°05'	V-10	0338	0346	258	0-71	179	179
127.40	26°43.5'	114°29'	V-10	0046	0101	462	0-140	242	130
127.45	26°33.5'	114°48.5'	V-9	2211	2226	453	0-146	174	174
127.50	26°23.5'	115°08'	V-9	1931	1946	462	0-143	173	141
127.55	26°13.5'	115°27'	V-9	1646	1701	465	0-139	120	120
127.60	26°04.5'	115°44.5'	V-9	1431	1446	489	0-140	139	139
130.30	26°29'	113°29'	V-8	1943	1950	212	0-64	1723	1582
130.35	26°18.5'	113°48'	V-8	2206	2221	473	0-148	53	53
130.40	26°07'	114°07'	V-9	0031	0046	464	0-139	52	32
130.50	25°45.5'	114°44'	V-9	0446	0501	475	0-139	99	69
130.60	25°23'	115°21'	V-9	0911	0926	467	0-143	56	56
133.25	26°04.5'	112°48'	V-8	1528	1536	179	0-85	1137	1137
133.30	25°57.5'	113°13'	V-8	1236	1250	326	0-134	306	306
133.40	25°34'	113°47'	V-8	0826	0840	350	0-149	297	297
133.50	25°08.5'	114°15'	V-8	0356	0411	452	0-151	393	393
137.23	25°34'	112°19'	V-7	1113	1120	238	0-63	383	383
137.30	25°20.5'	112°44'	V-7	1406	1420	439	0-145	462	462
137.40	24°59'	113°26'	V-7	1831	1846	470	0-149	160	160
137.50	24°41'	114°02'	V-7	2236	2251	442	0-148	113	48

Figure 7.--Plankton Volumes
June 1956



Plankton Volumes, Cruise 5606, June 1956

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1956)					Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
40.38	41°47'	124°28'	VI-4	1537	1548	498	0-75	209	209
40.40	41°43'	124°38.1'	VI-4	1800	1811	491	0-130	742	742
40.45	41°32.8'	125°00.4'	VI-4	2056	2111	460	0-117	1203	956
40.50	41°23'	125°23'	VI-5	0026	0041	536	0-106	777	777
40.60	41°01.5'	126°12.5'	VI-5	0606	0621	449	0-134	597	597
40.70	40°38'	127°02.5'	VI-5	1111	1126	292	0-155	3772	3724
40.80	40°22.5'	127°36.5'	VI-5	1546	1600	425	0-151	921	240
40.90	40°04'	128°19.8'	VI-5	2036	2051	410	0-140	1113	1113
43.42	41°04'	124°20.6'	VI-4	1042	1054	410	0-119	185	185
43.50	40°48.8'	124°56'	VI-4	0701	0715	422	0-120	3475	3298
43.60	40°31'	125°46'	VI-4	0126	0141	508	0-138	500	465
47.50	40°13.4'	124°33.8'	VI-3	1156	1211	446	0-148	438	438
47.55	40°03.5'	124°54.7'	VI-3	1541	1555	470	0-136	1971	1550
47.60	39°54'	125°18.8'	VI-3	1931	1946	504	0-129	428	319
50.47	39°46.5'	123°53.2'	VI-7	1053	1059	222	0-37	1061	1061
50.50	39°39.5'	124°06'	VI-7	0841	0856	356	0-128	565	222
50.55	39°30'	124°32'	VI-7	0541	0556	451	0-133	6596	233
50.60	39°19.8'	124°53'	VI-7	0156	0211	544	0-120	1372	334
50.70	39°00.1'	125°37'	VI-6	2006	2021	463	0-139	749	699
50.80	38°42.8'	126°21'	VI-6	1436	1451	463	0-142	380	155
50.90	38°26.5'	127°06'	VI-6	0916	0930	463	0-122	435	296
53.52	39°03.4'	123°51.4'	VI-3	0008	0015	232	0-76	1326	1140
53.55	38°58.2'	124°07.5'	VI-2	2201	2216	489	0-123	515	384
53.65	38°35.5'	124°51'	VI-2	1516	1531	435	0-119	1346	1268
57.51	38°30'	123°21.8'	VI-1	2343	2351	261	0-64	1253	1195
57.55	38°22.5'	123°39.7'	VI-2	0237	0246	340	0-95	550	212
57.65	38°00.6'	124°21.9'	VI-2	0741	0756	398	0-132	925	427
60.55	37°47.1'	123°16.7'	VI-1	1906	1920	392	0-141	262	120
60.57	37°42.8'	123°24.5'	VI-1	1736	1750	513	0-131	2887	189
60.60	37°35.5'	123°36.8'	VI-1	1441	1456	557	0-103	92	68
60.70	37°16.5'	124°18.2'	VI-1	0841	0856	442	0-128	287	163
60.80	36°57'	125°04'	VI-1	0331	0345	505	0-120	566	467
60.90	36°35.5'	125°45.3'	V-31	2116	2131	405	0-138	3680	2569
63.52	37°18.5'	122°37.5'	V-31	0228	0236	310	0-62	251	251
63.55	37°12.5'	122°49.6'	V-31	0421	0436	563	0-119	295	234
63.65	36°53.5'	123°32.5'	V-31	0931	0946	491	0-112	228	177
67.50	36°49'	122°04.1'	V-30	2213	2221	280	0-86	668	614
67.55	36°43'	122°21.5'	V-30	2021	2036	468	0-128	395	237
67.65	36°19'	123°09.8'	V-30	1506	1521	536	0-117	313	172
70.52	36°08.5'	121°50.5'	V-29	0026	0040	532	0-124	325	198
70.55	36°01.5'	122°03.5'	V-29	0431	0445	529	0-129	442	221
70.60	35°50.5'	122°23.5'	V-29	0836	0851	427	0-135	295	124
70.70	35°33'	122°57.5'	V-29	1331	1346	610	0-76	477	171

Position			(1956)	Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
								Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
70.80	35°13'	123°47.5'	V-29	2006	2021	493	0-127	589	355
70.90	34°53'	124°29'	V-30	0226	0241	513	0-109	575	189
73.50	35°37.3'	121°17.1'	V-28	1947	1956	281	0-80	519	441
73.60	35°18'	122°00.8'	V-28	1526	1541	447	0-138	116	89
73.70	34°55'	122°52'	V-28	0656	0710	460	0-121	1662	717
77.50	35°04'	120°52.5'	V-26	1127	1139	426	0-108	218	61
77.55	34°54.3'	121°12.5'	V-26	1501	1512	363	0-151	284	226
77.60	34°43'	121°32.1'	V-26	1846	1901	441	0-140	277	252
77.70	34°25.6'	122°10.8'	V-26	2341	2355	472	0-141	275	263
80.51	34°25.5'	120°31.5'	V-29	1138	1148	326	0-78	126	126
80.55	34°18'	120°49.5'	V-29	1456	1510	493	0-115	422	422
80.60	34°10.5'	121°08'	V-29	1825	1840	567	0-111	480	480
80.70	33°54.5'	121°48'	V-30	0110	0126	528	0-115	670	291
80.80	33°38'	122°29'	V-30	0731	0746	494	0-116	822	255
80.90	33°08'	123°13'	V-30	1533	1550	511	0-136	509	509
82.47	34°15'	119°58'	VI-1	0331	0346	494	0-123	334	334
83.40			Occupied. Sample not quantitative						
83.43	34°07.5'	119°34'	VI-1	0720	0736	488	0-133	174	174
83.51	33°51.4'	120°08'	V-31	2227	2239	385	0-106	374	374
83.55	33°37.3'	120°20'	V-31	1850	1906	462	0-135	1260	632
83.60	33°31.5'	120°37.6'	V-31	1536	1550	498	0-120	1006	183
83.70	33°08.5'	121°19.5'	V-31	1026	1040	463	0-132	326	190
83.80	32°49'	122°05'	V-31	0411	0426	516	0-121	231	231
83.90	32°31'	122°46'	V-30	2206	2220	470	0-135	3262	281
87.36	33°48'	118°42'	VI-1	1526	1541	548	0-109	210	210
87.40	33°42.5'	118°58.3'	VI-2	1141	1156	512	0-125	192	192
87.45	33°31'	119°19.2'	VI-2	1516	1530	485	0-131	371	196
87.50	33°20'	119°40'	VI-2	1838	1845	240	0-71	659	659
87.55	33°07'	120°07'	VI-2	2226	2241	479	0-129	368	368
87.60	33°03.9'	120°31'	VI-3	0241	0256	477	0-137	436	436
87.65	32°45'	120°55.5'	VI-3	0645	0700	501	0-134	1297	261
87.70	32°35.2'	121°17.8'	VI-3	1156	1210	492	0-136	518	244
87.80	32°16.3'	121°48.5'	VI-3	1656	1711	505	0-140	1017	146
90.28	33°28'	117°45.5'	VI-7	1854	1859	211	0-27	450	450
90.30	33°23.5'	117°54.7'	VI-7	2106	2122	540	0-130	474	474
90.37	33°10.3'	118°23'	VI-8	0246	0300	471	0-134	771	198
90.45	32°58'	118°57.5'	VI-8	0756	0810	305	0-143	905	905
90.50	32°51'	119°20'	VI-8	1131	1146	467	0-137	535	299
90.55	32°34.5'	119°37'	VI-8	1521	1536	513	0-116	386	386
90.60	32°24'	119°57'	VI-8	2121	2135	492	0-121	140	100
90.65	32°12.2'	120°18'	VI-9	0146	0201	484	0-131	887	504
90.70	32°01.3'	120°36.2'	VI-9	0721	0736	508	0-140	419	85

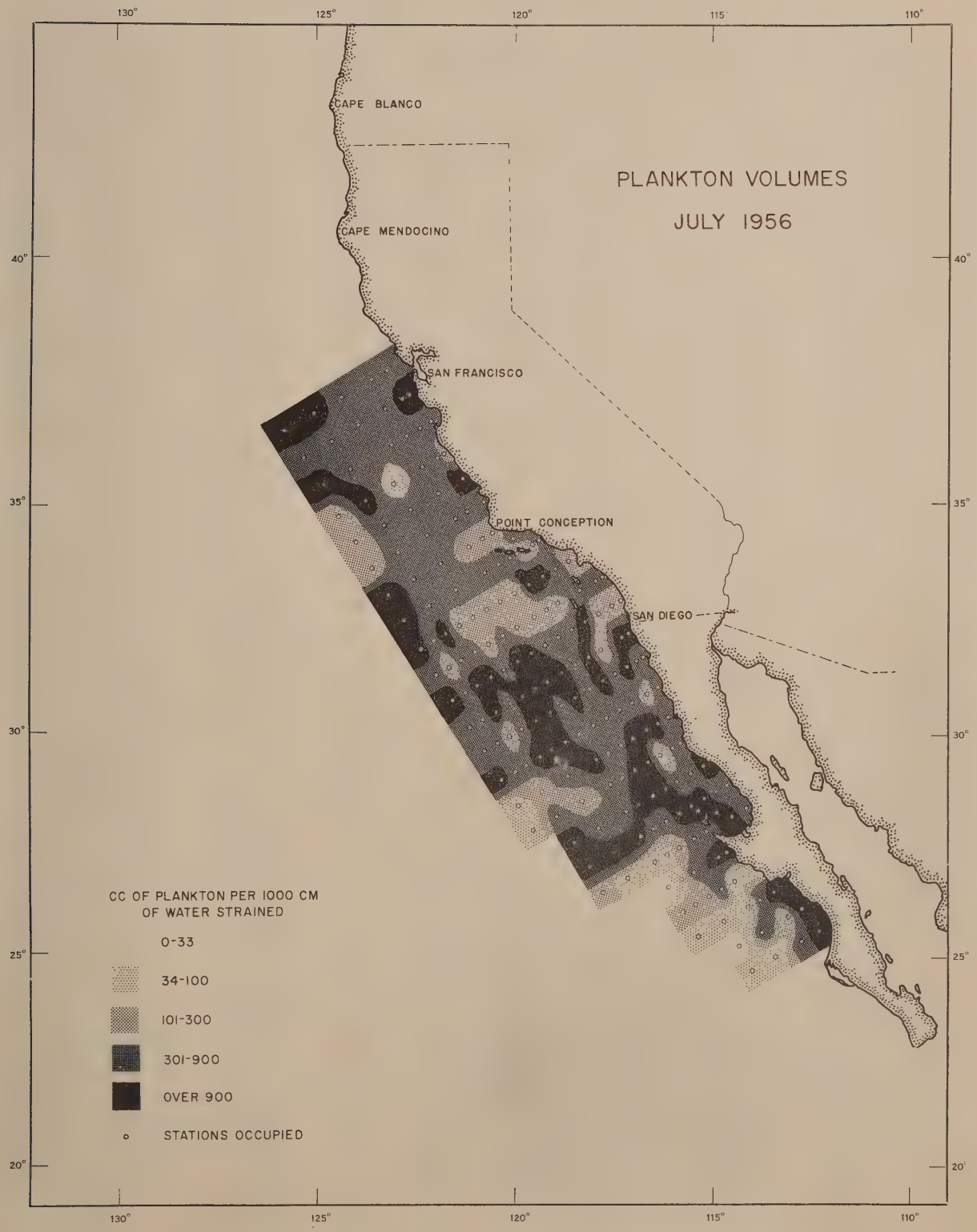
Position			(1956)	Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
								Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
90.75a	31°49.2'	120°58.7'	VI-4	1516	1531	441	0-141	270	270
90.75b	31°49.2'	120°58.7'	VI-9	1031	1046	480	0-143	223	223
90.80a	31°40'	121°16.5'	VI-4	0001	0016	421	0-146	271	271
90.80b	31°40'	121°16.5'	VI-9	1431	1446	483	0-132	306	306
90.85	31°36.2'	121°39.1'	VI-23	1326	1340	660	0-86	1305	366
90.90	31°26.2'	122°00'	VI-23	0941	0953	432	0-129	953	722
93.27	32°55.5'	117°19'	VI-11	1206	1220	475	0-110	147	147
93.30	32°49.7'	117°30.5'	VI-11	0951	1006	425	0-141	108	108
93.35	32°37.6'	117°39.5'	VI-11	0606	0621	517	0-125	91	91
93.40	32°25.3'	118°03.2'	VI-11	0231	0246	475	0-131	198	198
93.45	32°14.5'	118°26'	VI-10	2236	2251	468	0-138	226	226
93.50	32°01.5'	118°51'	VI-10	1810	1826	486	0-138	457	457
93.55	31°52.3	119°08.4'	VI-10	1416	1431	570	0-109	274	274
93.60	31°41.5'	119°30'	VI-10	1106	1121	474	0-135	376	376
93.65	31°32'	119°51'	VI-10	0746	0800	413	0-176	794	794
93.70	31°24.8'	120°10.8'	VI-10	0336	0350	512	0-125	1982	1875
93.75	31°15.6'	120°32'	VI-9	2341	2356	516	0-121	453	399
93.80	31°07.2'	120°53'	VI-9	2010	2026	472	0-148	1150	356
93.85	31°00'	121°19.7'	VI-23	1757	1815	636	0-110	629	629
93.90	30°50.4'	121°42.5'	VI-23	2016	2031	548	0-111	2255	2255
97.30	32°15'	117°07.7'	VI-12	1148	1154	221	0-110	253	253
97.32	32°11.8'	117°16.5'	VI-12	1426	1440	499	0-125	180	180
97.40	31°56.5'	117°49'	VI-12	1945	2001	542	0-111	288	288
97.45			Occupied. Sample spoiled						
97.50	31°35.8'	118°29'	VI-13	0341	0356	478	0-144	335	335
97.55	31°26.5'	118°48.2'	VI-13	0726	0742	533	0-130	1726	94
97.60	31°17.5'	119°07.2'	VI-13	1121	1136	541	0-111	139	139
97.65	31°06.2'	119°31.2'	VI-24	1801	1815	639	0-80	2421	2421
97.70	30°55.9'	119°50.8'	VI-24	1426	1441	569	0-98	1050	734
97.75	30°46.1'	120°09.2'	VI-24	1226	1241	528	0-111	490	490
97.80	30°38.4'	120°48'	VI-24	0851	0906	588	0-104	358	358
97.85	30°27.6'	121°06.3'	VI-24	0541	0556	685	0-79	640	640
97.90	30°17.2'	121°22.8'	VI-24	0241	0256	607	0-96	1394	920
100.29	31°41.7'	116°44.5'	VI-14	2256	2311	561	0-107	797	797
100.33	31°34.7'	116°58.7'	VI-14	2025	2041	523	0-127	243	243
100.35	31°31'	117°06.7'	VI-14	1741	1755	410	0-128	138	138
100.40	31°11.5'	117°38'	VI-14	1326	1340	487	0-127	140	140
100.45	31°10'	117°58.5'	VI-14	0825	0842	578	0-125	260	260
100.50	31°01.3'	118°17'	VI-14	0431	0446	495	0-134	299	299
100.60	30°36'	118°46.5'	VI-13	2140	2156	510	0-145	278	278
100.65	30°36'	119°03'	VI-13	1921	1936	522	0-122	709	709
103.30	31°05.5'	116°25.2'	VI-15	0513	0520	217	0-54	212	212
103.35	30°55'	116°45'	VI-15	0911	0925	489	0-138	205	205
103.40	30°44.6'	117°05.2'	VI-15	1320	1336	506	0-134	101	101

Plankton Volumes, Cruise 5606, June 1956 (cont'd)

Position			(1956)	Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	Total cc.	Sm.org. cc.
107.32	30°25.8'	116°11'	VI-16	1740	1756	396	0-145	290	290
107.35	30°20'	116°23'	VI-16	1430	1444	459	0-130	288	288
107.40	30°10.5'	116°43.5'	VI-16	1031	1045	421	0-141	155	155
107.45	30°00'	117°03.3'	VI-16	0746	0800	456	0-137	346	346
107.50	29°50.5'	117°23.7'	VI-16	0451	0506	428	0-141	551	551
107.55	29°40'	117°44'	VI-16	0146	0201	406	0-150	2086	2086
107.60	29°31'	118°03'	VI-15	2146	2200	418	0-139	1167	1167
107.65	29°21.5'	118°22'	VI-15	1836	1850	393	0-144	323	323
107.70	29°04.8'	118°45'	VI-15	1339	1354	455	0-139	1302	1302
107.75	28°55'	119°02.5'	VI-15	1006	1020	451	0-140	554	554
107.80	28°51.5'	119°22.5'	VI-15	0536	0550	433	0-139	420	420
107.85	28°41.7'	119°41'	VI-15	0236	0251	442	0-140	642	642
107.90	28°31.5'	120°01'	VI-14	2241	2256	441	0-140	1380	1380
110.33	29°50.5'	115°52.2'	VI-12	2113	2122	264	0-84	466	466
110.35	29°46.5'	116°00'	VI-12	2235	2249	448	0-135	1339	1339
110.40	29°36.5'	116°19.5'	VI-13	0201	0216	419	0-142	1334	1298
110.45	29°27'	116°39'	VI-13	0546	0601	381	0-142	662	662
110.50	29°16.5'	116°59'	VI-13	0821	0836	424	0-134	538	538
110.55	29°07'	117°17.7'	VI-13	1156	1210	376	0-150	1811	1811
110.60	28°57'	117°37'	VI-13	1511	1525	449	0-137	1747	1747
110.65	28°47'	117°58'	VI-13	2050	2104	419	0-141	198	198
110.70	28°36.5'	118°18'	VI-13	2326	2341	440	0-138	872	872
110.75	28°26.5'	118°37.5'	VI-14	0341	0356	421	0-147	1246	1246
110.80	28°16.5'	118°57.5'	VI-14	0631	0645	437	0-140	472	472
110.85	28°06.3'	119°16.8'	VI-14	1241	1256	417	0-143	166	166
110.90	27°56.5'	119°36'	VI-14	1546	1600	456	0-134	61	61
113.30	29°22.5'	115°17.5'	VI-12	1443	1449	239	0-42	459	459
113.35	29°12'	115°39'	VI-12	0939	0954	441	0-139	5516	5516
113.40	29°01.5'	115°57.5'	VI-12	0611	0626	438	0-139	322	322
113.45	28°51'	116°19.2'	VI-12	0246	0300	316	0-144	529	529
113.50	28°42'	116°37.5'	VI-11	2306	2320	371	0-146	927	927
113.55	28°32'	116°57'	VI-11	2016	2030	402	0-141	1115	1115
113.60	28°22'	117°16.5'	VI-11	1641	1656	398	0-143	553	553
113.65	28°12'	117°35.2'	VI-11	1331	1346	410	0-144	2417	2417
113.70	28°02.3'	117°58.5'	VI-11	1016	1030	443	0-141	2112	2112
113.75	27°46.8'	118°28'	VI-11	0606	0620	425	0-142	1713	1713
113.80	27°36'	118°47'	VI-11	0156	0211	416	0-140	2173	2132
117.26	28°56'	114°40.8'	VI-8	1858	1905	154	0-78	648	648
117.30	28°48'	114°56.3'	VI-8	2047	2058	187	0-95	556	556
117.35	28°38'	115°16'	VI-9	0001	0016	282	0-132	1430	935
117.40	28°28'	115°35.5'	VI-9	0256	0311	422	0-140	356	356
117.45	28°18'	115°55.2'	VI-9	2031	2046	445	0-142	2770	2770
117.50	28°08'	116°15'	VI-9	2316	2331	442	0-148	1071	886

Position			(1956)	Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
								Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
117.55	27°57.7'	116°34.5'	VI-10	0301	0316	437	0-145	1262	907
117.60	27°47.7'	116°54.2'	VI-10	0626	0640	420	0-144	476	476
117.65	27°39.2'	117°14'	VI-10	1001	1016	419	0-141	935	935
117.70	27°29.5'	117°30.5'	VI-10	1226	1241	432	0-139	832	832
117.75	27°17.5'	117°51.7'	VI-10	1556	1610	413	0-145	1803	1803
117.80	27°08'	118°11'	VI-10	1834	1848	437	0-140	2304	2304
118.39	28°18.5'	115°24'	VI-9	0524	0539	319	0-108	2231	2231
119.33	28°19'	114°53'	VI-8	0607	0618	198	0-109	1293	1293
120.25	28°23'	114°14.5'	VI-8	1203	1209	91	0-50	832	832
120.30	28°13'	114°34'	VI-8	0837	0847	148	0-90	729	729
120.40	27°56.5'	115°14'	VI-8	0254	0258	131	0-27	244	244
120.45	27°40.7'	115°29.5'	VI-7	2006	2021	396	0-140	194	194
120.50	27°33'	115°52'	VI-7	1541	1555	391	0-146	128	128
120.55	27°32.7'	116°08.5'	VI-7	1226	1241	436	0-143	372	372
120.60	27°22.3'	116°26'	VI-7	0921	0935	415	0-141	686	493
120.70	26°55.7'	117°10'	VI-7	0301	0316	404	0-145	2096	2079
120.80	26°32.5'	117°48.5'	VI-6	2036	2050	437	0-134	1502	1502
123.37	27°24'	114°39.7'	VI-5	0906	0914	234	0-71	1076	1076
123.40	27°18'	114°51.5'	VI-5	2006	2021	376	0-137	207	207
123.42	27°14'	114°59.2'	VI-5	2131	2146	332	0-136	331	271
123.50	26°56.7'	115°30.7'	VI-6	0246	0301	374	0-139	110	110
123.55	26°48.2'	115°49.7'	VI-6	0616	0631	418	0-139	29	29
123.60	26°38.5'	116°09'	VI-6	0940	0954	434	0-134	30	30
127.34	26°55.3'	114°06'	VI-5	0348	0355	202	0-67	812	812
127.40	26°42.5'	114°31'	VI-4	2335	2349	377	0-138	339	302
127.45	26°33.5'	114°48.7'	VI-4	2026	2041	348	0-133	101	66
127.50	26°23.5'	115°08'	VI-4	1714	1728	348	0-139	126	126
127.55	26°14'	115°27'	VI-4	1331	1346	344	0-136	1975	1975
127.60	26°03'	115°46.5'	VI-4	0926	0940	374	0-142	1368	1368
130.30	26°28'	113°25'	VI-3	0823	0831	225	0-69	1046	1046
130.35	26°19'	113°48.5'	VI-3	1102	1116	393	0-140	160	160
130.40	26°09'	114°07.5'	VI-3	1431	1445	387	0-139	88	88
130.50	25°49'	114°46'	VI-3	2056	2110	387	0-140	238	238
130.60	25°29'	115°24'	VI-4	0231	0256	384	0-131	122	122
133.25	26°04'	112°46.5'	VI-3	0318	0326	171	0-61	2998	2998
133.30	25°54.5'	113°07.5'	VI-2	2336	2350	463	0-138	216	216
133.40	25°30'	113°46'	VI-2	1726	1741	721	0-138	24	24
133.50	25°14.5'	114°24'	VI-2	1141	1155	423	0-145	31	31
137.23	25°34'	112°18.7'	VI-1	0901	0908	240	0-70	2470	2470
137.30	25°20'	112°45.5'	VI-1	1216	1231	441	0-113	442	442
137.40	25°00'	113°23.5'	VI-1	2128	2142	312	0-140	247	247
137.50	24°40'	114°01.5'	VI-2	0604	0618	411	0-141	68	68

Figure 8.--Plankton Volumes
July 1956



Plankton Volumes, Cruise 5607, July 1956

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
60.55	37°54'	123°15'	VII-19	2213	2221	182	0-67	713	713
60.60	37°45'	123°37'	VII-22	1526	1541	476	0-129	433	433
60.70	37°25'	124°20.5'	VII-22	2011	2026	509	0-128	851	527
60.80	37°05'	125°04'	VII-23	0101	0116	498	0-130	1333	1333
60.90	36°45'	125°45.5'	VII-23	0551	0606	452	0-133	902	902
63.52	37°19'	122°36.3'	VII-19	1208	1214	175	0-56	1895	1895
63.55	37°13.3'	122°50'	VII-19	1351	1406	294	0-136	1632	1632
63.60	37°03.7'	123°13'	VII-19	1636	1651	477	0-140	612	612
63.70	36°43'	123°54.6'	VII-23	1916	1930	476	0-129	862	538
63.80	36°26.2'	124°40'	VII-23	1431	1446	437	0-146	407	343
63.90	36°12'	125°20'	VII-23	1021	1036	470	0-138	362	362
67.50	36°49'	122°04.5'	VII-19	0718	0725	278	0-64	363	331
67.55	36°47'	122°28.5'	VII-19	0406	0420	263	0-142	585	585
67.60	36°34'	122°50'	VII-19	0121	0136	394	0-135	462	462
67.70	36°09.5'	123°30'	VII-18	2021	2036	420	0-139	1589	471
67.80	35°45'	124°10'	VII-18	1421	1435	451	0-140	674	674
67.90	35°21'	124°54.5'	VII-18	0901	0916	447	0-139	1073	1029
70.52	36°10.5'	121°51'	VII-17	0711	0726	520	0-116	342	183
70.55	36°03.3'	122°03'	VII-17	0906	0921	404	0-120	1016	892
70.60	35°54'	122°25'	VII-17	1201	1215	410	0-129	722	722
70.70	35°32.5'	123°07'	VII-17	1656	1711	476	0-123	397	281
70.80	35°11.5'	123°48.5'	VII-17	2156	2211	473	0-127	2268	2268
70.90	34°49.5'	124°30'	VII-18	0301	0315	450	0-140	131	131
73.50	35°38.4'	121°17.5'	VII-16	1724	1729	157	0-41	1313	956
73.60	35°14.1'	122°06'	VII-16	1051	1106	456	0-136	386	302
73.70	34°54.5'	122°49'	VII-16	0526	0540	380	0-142	468	468
73.80	34°35.5'	123°28.5'	VII-16	0036	0050	385	0-137	886	587
73.90	34°17'	124°08.5'	VII-15	1936	1951	405	0-139	279	215
77.50	35°03.4'	120°53.5'	VII-14	1831	1845	436	0-132	450	335
77.55	34°54'	121°13'	VII-14	2106	2121	483	0-136	410	373
77.60	34°45'	121°34.5'	VII-15	0001	0015	438	0-135	406	406
77.70	34°26.5'	122°18'	VII-15	0451	0506	449	0-137	1353	427
77.80	34°08'	123°00.5'	VII-15	0941	0956	400	0-135	585	400
77.90	33°46'	123°41.5'	VII-15	1451	1505	402	0-139	355	298
80.51	34°26.5'	120°33'	VII-14	1343	1350	244	0-62	299	168
80.55	34°21'	120°46'	VII-14	1141	1156	463	0-139	287	194
80.60	34°10.5'	121°07'	VII-14	0906	0921	501	0-130	383	287
80.70	33°49.7'	121°48.5'	VII-14	0416	0431	481	0-140	517	324
80.80	33°30.2'	122°30'	VII-13	2311	2326	478	0-139	518	376
80.90	33°09'	123°13'	VII-13	1736	1751	478	0-141	1078	1078
82.47	34°15'	119°58'	VII-12	1226	1240	529	0-124	692	692
83.40	34°14'	119°22'	VII-12	0730	0731	97	0-13	380	380
83.43	34°07.5'	119°31.7'	VII-12	0911	0926	508	0-129	268	268

Plankton Volumes, Cruise 5607, July 1956 (cont'd)

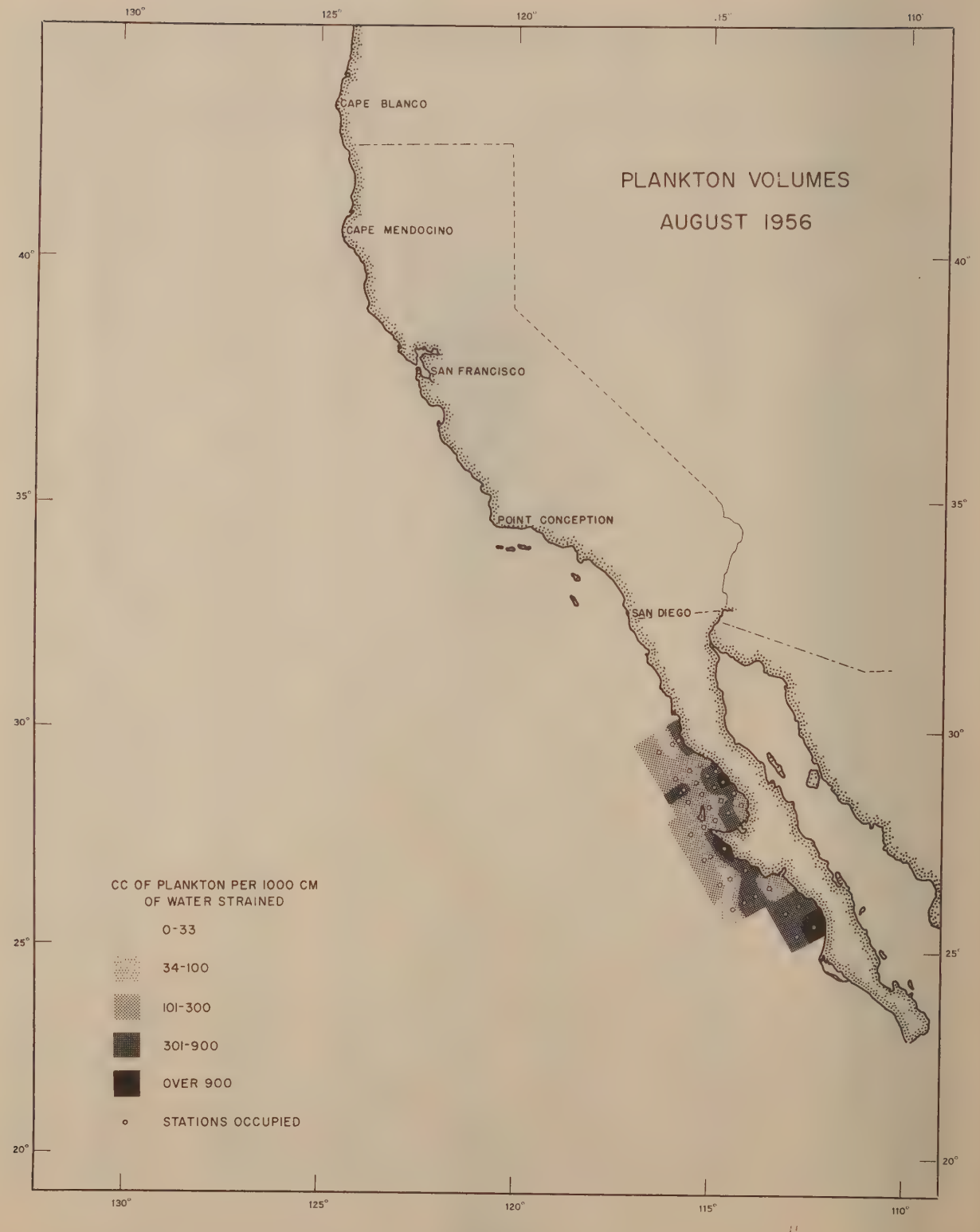
Position			(1956)	Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
								Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
83.48	33°58.5'	119°55'	VII-12	1448	1454	206	0-54	213	213
83.51	33°51.1'	120°07.5'	VII-12	1701	1715	460	0-135	422	313
83.55	33°40.5'	120°28.2'	VII-12	1941	1955	492	0-135	560	560
83.60	33°34'	120°45'	VII-12	2211	2226	473	0-134	545	393
83.70	33°14'	121°27'	VII-13	0306	0320	448	0-142	1081	706
83.80	32°53.2'	122°09'	VII-13	0806	0821	480	0-133	471	471
83.90	32°35.2'	122°47.2'	VII-13	1231	1246	460	0-140	1253	1253
87.36	33°47.7'	118°41'	VII-11	1626	1641	510	0-133	204	204
87.40	33°38'	118°57'	VII-11	1856	1910	440	0-135	439	364
87.45	33°30'	119°19'	VII-11	2136	2151	340	0-138	1673	1673
87.50	33°20'	119°39.5'	VII-12	0044	0048	107	0-41	3190	3190
87.55	33°04.5'	119°58.2'	VII-9	1741	1755	507	0-115	134	134
87.60	32°55.5'	120°16.5'	VII-9	1506	1520	451	0-134	153	153
87.65	32°44'	120°36'	VII-9	1226	1240	435	0-139	253	253
87.70	32°36'	120°52'	VII-9	0956	1011	448	0-136	196	196
87.75	32°26.5'	121°14'	VII-9	0651	0706	456	0-139	355	261
87.80	32°17'	121°36'	VII-9	0341	0355	465	0-137	986	912
87.85	32°06.5'	121°58'	VII-9	0026	0040	455	0-135	554	554
87.90	31°57'	122°19'	VII-8	2101	2116	476	0-135	942	917
90.28	33°28.5'	117°47'	VII-7	0251	0306	490	0-137	612	612
90.30	33°24.5'	117°55'	VII-7	0426	0441	459	0-134	674	610
90.37	33°11'	118°23.5'	VII-7	0746	0801	445	0-140	849	764
90.45	32°55.5'	118°56'	VII-7	1156	1211	429	0-145	266	266
90.50	32°45.5'	119°15'	VII-7	1501	1516	445	0-134	191	191
90.55	32°35.5'	119°33.5'	VII-7	1756	1811	530	0-138	559	198
90.60	32°25.5'	119°52'	VII-7	2041	2056	453	0-134	117	117
90.65	32°16'	120°11.5'	VII-8	0001	0015	468	0-136	898	701
90.70	32°06.5'	120°30'	VII-8	0246	0300	446	0-139	1551	215
90.75	31°56'	120°49'	VII-8	0536	0551	454	0-138	357	357
90.80	31°45.5'	121°09'	VII-8	0821	0836	449	0-138	813	535
90.85	31°32'	121°35'	VII-8	1141	1156	447	0-140	217	217
90.90	31°25'	121°59'	VII-8	1441	1455	485	0-140	371	371
93.27	32°55.9'	117°20.4'	VII-6	2046	2101	551	0-129	165	165
93.30	32°50.7'	117°31.6'	VII-6	2305	2321	569	0-133	172	172
93.35	32°40'	117°54.5'	VII-7	0226	0241	564	0-126	168	168
93.40	32°31.5'	118°12.9'	VII-7	0554	0611	533	0-142	1095	1095
93.45	32°23'	118°33'	VII-7	1016	1031	489	0-133	777	777
93.50	32°14.2'	118°52.8'	VII-7	1316	1331	445	0-147	908	548
93.55	32°06'	119°11.9'	VII-7	1625	1641	546	0-141	720	630
93.60	31°57.2'	119°30.8'	VII-7	2005	2021	585	0-123	1640	1640
93.65	31°46.2'	119°50'	VII-7	2336	2352	624	0-107	975	975
93.70	31°35'	120°10'	VII-8	0326	0340	416	0-142	682	682
93.75	31°24.3'	120°28.8'	VII-8	0816	0831	548	0-140	1604	1604

Position				Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
			(1956)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
93.80	31°10.5'	120°52'	VII-8	1246	1301	484	0-137	2941	2312
93.85	31°01.8'	121°12'	VII-8	1546	1611	488	0-136	729	729
93.90	30°50'	121°33.7'	VII-8	1916	1930	463	0-146	1038	1038
97.30	32°15.5'	117°08.4'	VII-11	1628	1634	211	0-50	1573	1573
97.32	32°11.5'	117°16.3'	VII-11	1816	1831	460	0-135	1206	1130
97.40	32°03.1'	117°52.8'	VII-10	0926	0941	498	0-120	130	130
97.45	31°51.9'	118°12'	VII-10	0626	0641	481	0-140	1872	1872
97.50	31°40.4'	118°32.1'	VII-10	0316	0330	503	0-133	509	509
97.55	31°28.8'	118°51.1'	VII-10	0006	0021	480	0-138	1151	1151
97.60	31°17'	119°11'	VII-9	2036	2050	508	0-124	1671	1671
97.65	31°05.8'	119°31'	VII-9	1720	1735	531	0-125	1341	1341
97.70	30°54'	119°50.3'	VII-9	1356	1411	541	0-112	917	917
97.75	30°43'	120°11'	VII-9	1036	1051	589	0-126	591	591
97.80	30°34'	120°30.4'	VII-9	0716	0731	456	0-145	1229	1229
97.85	30°24.1'	120°50.9'	VII-9	0355	0411	485	0-150	804	660
97.90	30°15'	121°11'	VII-9	0056	0111	489	0-144	736	654
100.29	31°42.7'	116°43'	VII-11	2346	0001	541	0-126	307	307
100.30	31°42.7'	116°46.7'	VII-12	0026	0041	550	0-118	531	531
100.35	31°33.5'	117°03.9'	VII-12	0356	0410	493	0-137	1032	941
100.40	31°25.2'	117°20.9'	VII-12	0716	0731	513	0-137	581	581
100.45	31°17.4'	117°37.4'	VII-12	1136	1151	528	0-124	1211	1135
100.50	31°03.9'	118°07.7'	VII-12	1436	1451	524	0-116	687	687
100.55	30°53.3'	118°31'	VII-12	1836	1850	485	0-135	1450	1450
100.60	30°42.5'	118°53.9'	VII-12	2135	2151	548	0-117	599	599
100.65	30°32.3'	119°17.2'	VII-13	0116	0131	515	0-122	1831	1831
100.70	30°22.9'	119°37.4'	VII-13	0426	0440	437	0-141	1409	1409
100.75	30°13.4'	119°59.2'	VII-13	0755	0811	586	0-126	655	655
100.80	30°04'	120°20.9'	VII-13	1031	1046	525	0-119	194	194
100.85	29°53.2'	120°36.8'	VII-13	1311	1326	541	0-114	777	777
100.90	29°40.8'	120°47'	VII-13	1556	1610	496	0-138	871	871
103.30	31°06.5'	116°24'	VII-15	1114	1119	195	0-22	369	369
103.35	30°52.8'	116°52'	VII-15	0706	0720	473	0-136	285	232
103.40	30°42.7'	117°12'	VII-15	0316	0331	506	0-117	879	790
103.45	30°337'	117°29.7'	VII-15	0021	0035	502	0-133	877	877
103.50	30°24.1'	117°48.1'	VII-14	2126	2140	471	0-132	611	611
103.55	30°15.6'	118°06'	VII-14	1826	1841	423	0-141	331	331
103.60	30°08.5'	118°19'	VII-14	1541	1556	522	0-127	536	536
103.65	29°51.8'	118°39.1'	VII-14	1226	1240	549	0-120	1093	1093
103.70	29°44.8'	118°51.1'	VII-14	1016	1031	532	0-131	1324	1324
103.75	29°35'	119°13.2'	VII-14	0726	0741	474	0-139	1520	1520
103.80	29°26.1'	119°35.4'	VII-14	0406	0421	483	0-138	746	746
103.85	29°17'	119°57.3'	VII-14	0046	0101	548	0-121	773	773
103.90	29°08'	120°19.6'	VII-13	2136	2151	510	0-123	2634	2634

Plankton Volumes, Cruise 5607, July 1956 (cont'd)

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
107.32	30°26.5'	116°11.2'	VII-15	1641	1655	540	0-103	519	519
107.35	30°19.3'	116°25.2'	VII-15	1856	1911	518	0-122	1236	1236
107.40	30°08.1'	116°45.4'	VII-15	2216	2231	505	0-131	4386	4386
107.45	29°56.5'	117°06.8'	VII-16	0146	0201	511	0-126	5066	5066
107.50	29°45.3'	117°27'	VII-16	0506	0521	492	0-126	346	346
107.55	29°34.3'	117°47.1'	VII-16	0831	0846	534	0-120	756	756
107.60	29°17'	118°09.6'	VII-16	1206	1220	533	0-109	2032	2032
107.70	29°11'	118°43'	VII-16	2205	2221	592	0-103	776	776
107.80	28°51'	119°23'	VII-17	0411	0426	485	0-129	144	144
107.90	28°32.5'	120°01'	VII-17	1001	1016	532	0-133	60	60
110.33	29°49.5'	115°52.2'	VII-19	1123	1131	268	0-117	373	373
110.35	29°44.3'	115°52.7'	VII-18	2336	2351	309	0-134	4760	750
110.40	29°37.7'	116°07.2'	VII-18	2131	2146	526	0-119	99	99
110.45	29°28.2'	116°32'	VII-18	1816	1830	446	0-137	1310	1310
110.50	29°17.2'	116°57.3'	VII-18	1516	1530	550	0-114	2616	2616
110.55	29°08.7'	117°23.5'	VII-18	1136	1150	500	0-126	519	519
110.60	28°59'	117°40'	VII-18	0836	0850	526	0-124	402	402
110.70	28°38.2'	118°19.3'	VII-18	0306	0321	522	0-124	247	247
110.80	28°17.7'	118°57.3'	VII-17	2106	2120	551	0-118	617	617
110.90	27°58'	119°37.7'	VII-17	1536	1551	561	0-111	50	50
113.30	29°22.5'	115°17.5'	VII-17	0359	0404	174	0-37	953	953
113.35	29°12'	115°39'	VII-17	0051	0106	321	0-145	533	502
113.40	29°02'	115°58.5'	VII-16	2211	2226	313	0-150	390	390
113.45	28°52'	116°18'	VII-16	1921	1936	352	0-142	2953	2953
113.50	28°42'	116°37.5'	VII-16	1620	1635	368	0-129	935	935
113.55	28°32'	116°57'	VII-16	1300	1315	399	0-129	1033	1033
113.60	28°23'	117°30'	VII-16	0856	0911	438	0-137	677	677
113.70	28°02.3'	117°58'	VII-16	0336	0351	409	0-147	491	491
113.80	27°41.8'	118°34.8'	VII-15	2241	2256	408	0-149	1077	1077
117.26	28°55.8'	114°40.7'	VII-14	1010	1018	208	0-72	412	412
117.30	28°48'	114°56.3'	VII-14	1217	1227	224	0-91	576	576
117.35	28°38'	115°16'	VII-14	1536	1550	430	0-143	2085	2085
117.40	28°28'	115°35.5'	VII-14	2040	2055	408	0-141	1599	1187
117.45	28°18'	115°55.2'	VII-14	2315	2330	412	0-139	931	931
117.50	28°08'	116°15'	VII-15	0204	0219	412	0-141	997	883
117.55	27°57.7'	116°34.5'	VII-15	0456	0510	392	0-139	695	695
117.60	27°47.5'	116°54'	VII-15	0711	0726	416	0-137	1788	1788
117.70	27°27.5'	117°32.5'	VII-15	1216	1231	413	0-141	1841	1841
117.80	27°07.5'	118°11.5'	VII-15	1726	1740	438	0-138	1205	1205
118.39	28°18.5'	115°24'	VII-14	1831	1845	427	0-141	1517	1517
119.33	28°19'	114°53'	VII-14	0022	0032	281	0-95	6023	2281
120.25	28°23'	114°14.5'	VII-14	0526	0531	138	0-39	639	639
120.30	28°13'	114°34'	VII-14	0251	0259	235	0-70	1225	1225

Figure 9.--Plankton Volumes
August 1956



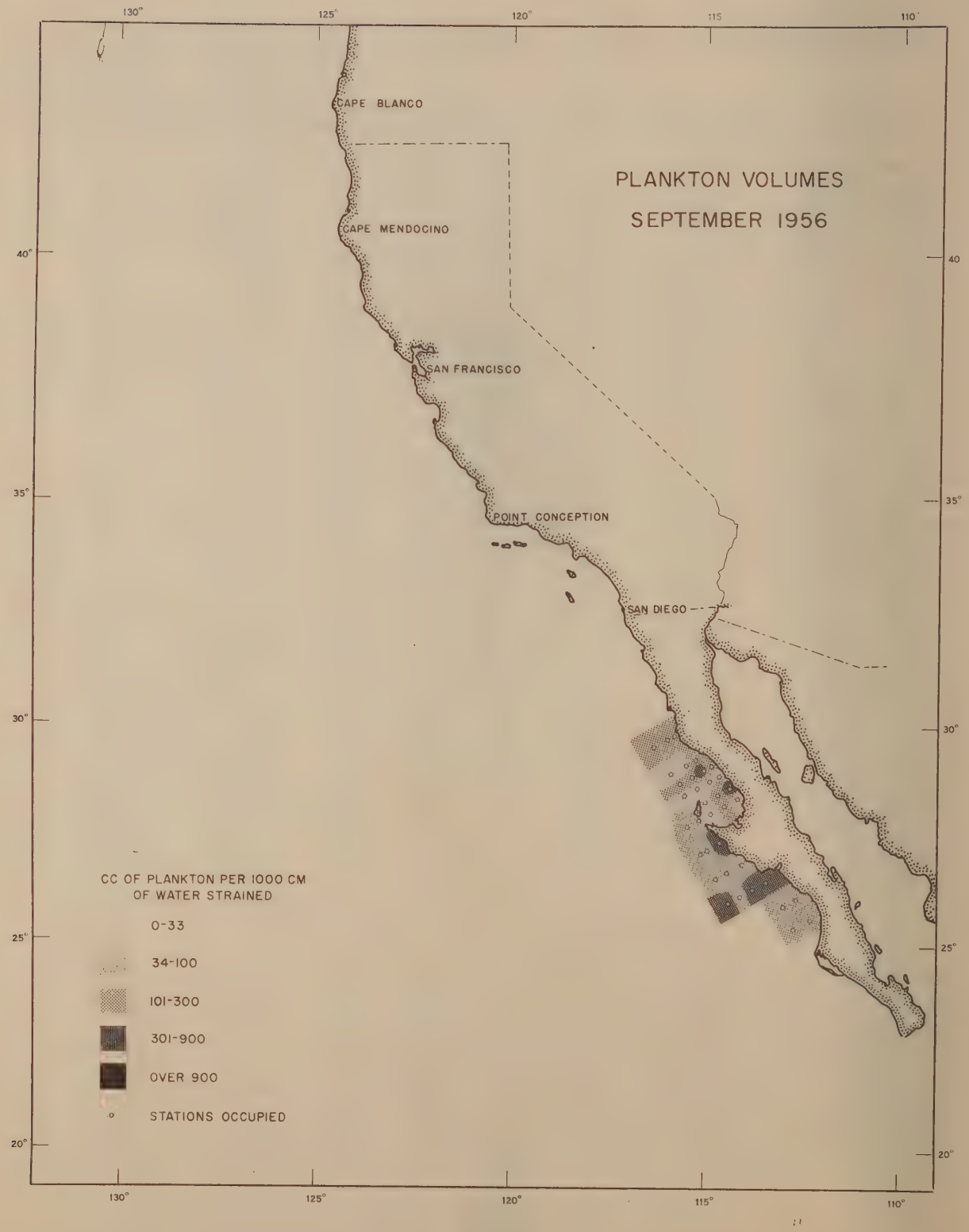
Plankton Volumes, Cruise 5607, July 1956 (cont'd)

Position			Time (PST)			Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
Sta.	N.lat.	W.long.	(1956) Date	Start	End	C.M.	in meters	Total cc.	Sm.org. cc.
120.40	27°56.5'	115°14'	VII-13	2044	2048	146	0-31	542	542
120.45	27°43'	115°33'	VII-13	1726	1741	444	0-136	876	820
120.50	27°33'	115°52.5'	VII-13	1452	1507	448	0-141	201	201
120.55	27°23'	116°12'	VII-13	1146	1201	491	0-139	53	53
120.60	27°13'	116°28'	VII-13	0946	1001	458	0-140	68	68
120.70	26°52.5'	117°10'	VII-13	0456	0510	453	0-141	93	93
120.80	26°32.5'	117°48.5'	VII-12	2331	2345	515	0-121	120	120
123.37	27°24'	114°39.7'	VII-12	0053	0101	243	0-69	4145	2500
123.42	27°14'	114°59.7'	VII-12	0401	0416	444	0-141	1811	1710
123.50	26°58'	115°30.5'	VII-12	0750	0805	501	0-129	483	333
123.55	26°48.2'	115°49.7'	VII-12	1040	1055	490	0-137	63	63
123.60	26°38.5'	116°09'	VII-12	1300	1315	451	0-141	27	27
127.34			Occupied. Sample spoiled						
127.40	26°43.5'	114°29.5'	VII-11	1631	1645	435	0-145	53	53
127.45	26°33.5'	114°48.7'	VII-11	1333	1348	463	0-141	890	890
127.50	26°23.5'	115°08'	VII-11	1056	1110	257	0-116	124	109
127.55	26°13.5'	115°27.2'	VII-11	0836	0851	529	0-117	159	159
127.60	26°03.5'	115°46.5'	VII-11	0541	0556	465	0-141	301	299
130.30	26°29'	113°29'	VII-10	0926	0933	284	0-61	1057	1014
130.35	26°19'	113°48.5'	VII-10	1200	1214	515	0-130	590	590
130.40	26°09'	114°07.5'	VII-10	1456	1511	490	0-142	92	92
130.50	25°49'	114°46'	VII-10	2001	2016	442	0-139	77	77
130.60	25°29'	115°24'	VII-11	0101	0116	511	0-136	86	86
133.25	26°04.5'	112°48'	VII-10	0410	0416	206		4393	4107
133.30	25°54.5'	113°07.5'	VII-10	0116	0131	527	0-132	264	184
133.40	25°34.5'	113°45.5'	VII-9	2016	2030	459	0-192	445	445
133.50	25°14.2'	114°24'	VII-9	1441	1455	462	0-137	32	32
137.23	25°34.2'	112°18.7'	VII-8	2003	2011	269	0-77	2192	1635
137.30	25°20'	112°45.5'	VII-8	2335	2351	533	0-136	463	443
137.40	25°00'	113°23.5'	VII-9	0431	0446	445	0-143	70	70
137.50	24°40'	114°01.5'	VII-9	0946	1001	493	0-144	71	41

Plankton Volumes, Cruise 5608, August 1956

110.33	29°50.5'	115°52.7'	VIII-17	2032	2042	277	0-75	418	418
110.35	29°46.5'	116°00'	VIII-17	2146	2200	569	0-141	142	98
110.40	29°36.5'	116°19.5'	VIII-18	0001	0016	598	0-128	251	251
113.30	29°22.5'	115°17.5'	VIII-17	1439	1443	121	0-36	182	182
113.35	29°13.2'	115°40'	VIII-17	1131	1145	433	0-138	127	127
113.40	29°02'	115°58.5'	VIII-17	0856	0911	422	0-132	190	190
115.27	29°11'	114°55'	VIII-16	2233	2241	162	0-64	854	854
115.30	29°05'	115°08'	VIII-17	2358	0007	204	0-73	587	587

Figure 10.--Plankton Volumes
September 1956



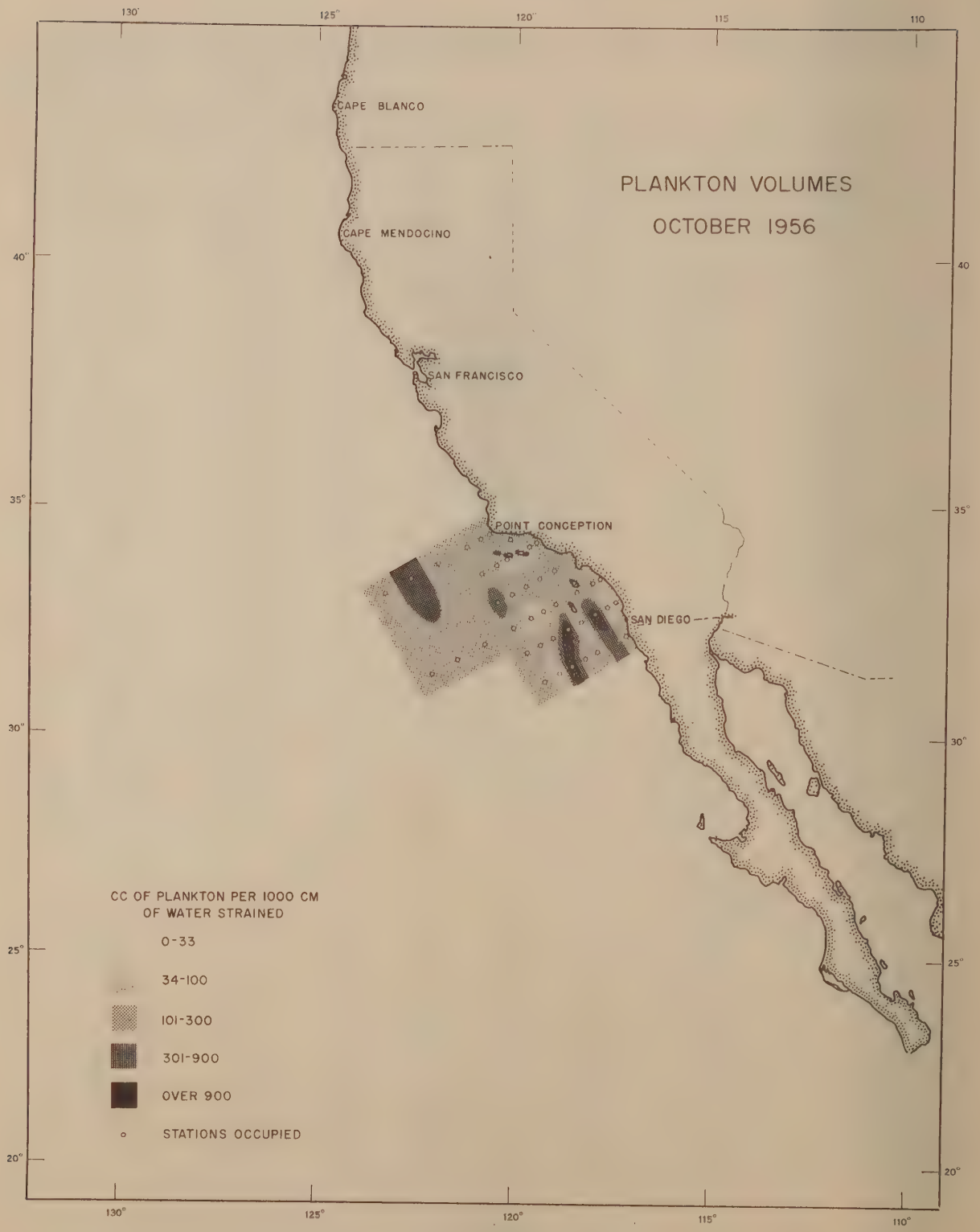
Plankton Volumes, Cruise 5608, August 1956 (cont'd)

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
115.35	28°55'	115°27.5'	VIII-17	0301	0316	365	0-138	258	258
115.40	28°45'	115°47'	VIII-17	0601	0616	388	0-137	358	358
117.26	28°56'	114°41'	VIII-16	2010	2014	96	0-36	1220	1220
117.30	28°48'	114°56.5'	VIII-16	1811	1822	277	0-108	577	577
117.35	28°38'	115°16'	VIII-16	1521	1535	452	0-128	120	120
117.40	28°28'	115°35.5'	VIII-16	1208	1222	419	0-127	103	103
118.25	28°40.5'	114°25.5'	VIII-16	0213	0221	247	0-58	393	393
118.30	28°30.5'	114°45.5'	VIII-16	0507	0517	280	0-88	157	157
118.35	28°20.5'	115°05'	VIII-16	0822	0832	271	0-91	147	147
120.25	28°23'	114°14.5'	VIII-15	2255	2259	117	0-31	205	205
120.30	28°13'	114°34'	VIII-15	2013	2024	276	0-100	355	355
120.35	28°03'	114°54'	VIII-15	1701	1712	327	0-102	126	126
120.40	27°56.5'	115°14'	VIII-15	1434	1438	139	0-31	288	288
120.45	27°40'	115°31.2'	VIII-15	1133	1147	416	0-141	192	192
123.37	27°24'	114°39.7'	VIII-15	0053	0100	213	0-60	1175	1175
123.42	27°14'	114°59.7'	VIII-15	0321	0335	443	0-130	280	280
123.45	27°08'	115°11.2'	VIII-15	0506	0521	434	0-132	161	161
127.34	26°55.3'	114°06'	VIII-14	1832	1841	319	0-75	320	320
127.40	26°43	114°29'	VIII-14	1428	1443	441	0-142	95	95
127.45	26°34'	114°48'	VIII-14	1146	1200	423	0-141	296	296
130.30	26°29'	113°29'	VIII-13	2258	2306	193	0-69	259	259
130.35	26°19'	113°48.5'	VIII-14	0116	0130	401	0-144	509	509
130.40	26°09'	114°07.5'	VIII-14	0356	0411	442	0-135	308	308
130.45	25°59'	114°25.7'	VIII-14	0631	0645	411	0-143	58	58
133.25	26°04.5'	112°48'	VIII-13	1633	1640	195	0-74	308	308
133.30	25°54.5'	113°07.5'	VIII-13	1350	1404	358	0-108	615	615
137.23	25°34.2'	112°18.7'	VIII-12	1948	1956	226	0-60	1273	1273
137.30	25°20'	112°45.5'	VIII-12	2341	2355	402	0-148	597	597

Plankton Volumes, Cruise 5609, September 1956

110.33	29°50.5'	115°52.2'	IX-16	1647	1657	326	0-85	135	135
110.35	29°46.5'	116°00'	IX-16	1814	1828	492	0-133	155	155
110.40	29°36.5'	116°19.5'	IX-16	2151	2205	454	0-139	260	216
113.30	29°22.5'	115°17.5'	IX-16	1138	1144	225	0-55	120	120
113.35	29°12'	115°39'	IX-16	0831	0846	446	0-140	94	94
113.40	29°02'	115°59'	IX-16	0541	0555	492	0-125	57	57
115.27	29°11'	114°55'	IX-15	1943	1950	163	0-66	160	160
115.30	29°05'	115°08'	IX-15	2118	2126	201	0-79	518	518
115.35	28°55'	115°27.5'	IX-16	0006	0021	485	0-136	291	291
115.40	28°45'	115°47'	IX-16	0246	0300	480	0-134	604	291
117.26	28°56'	114°41'	IX-15	1648	1655	280	0-48	61	61

Figure 11.--Plankton Volumes
October 1956



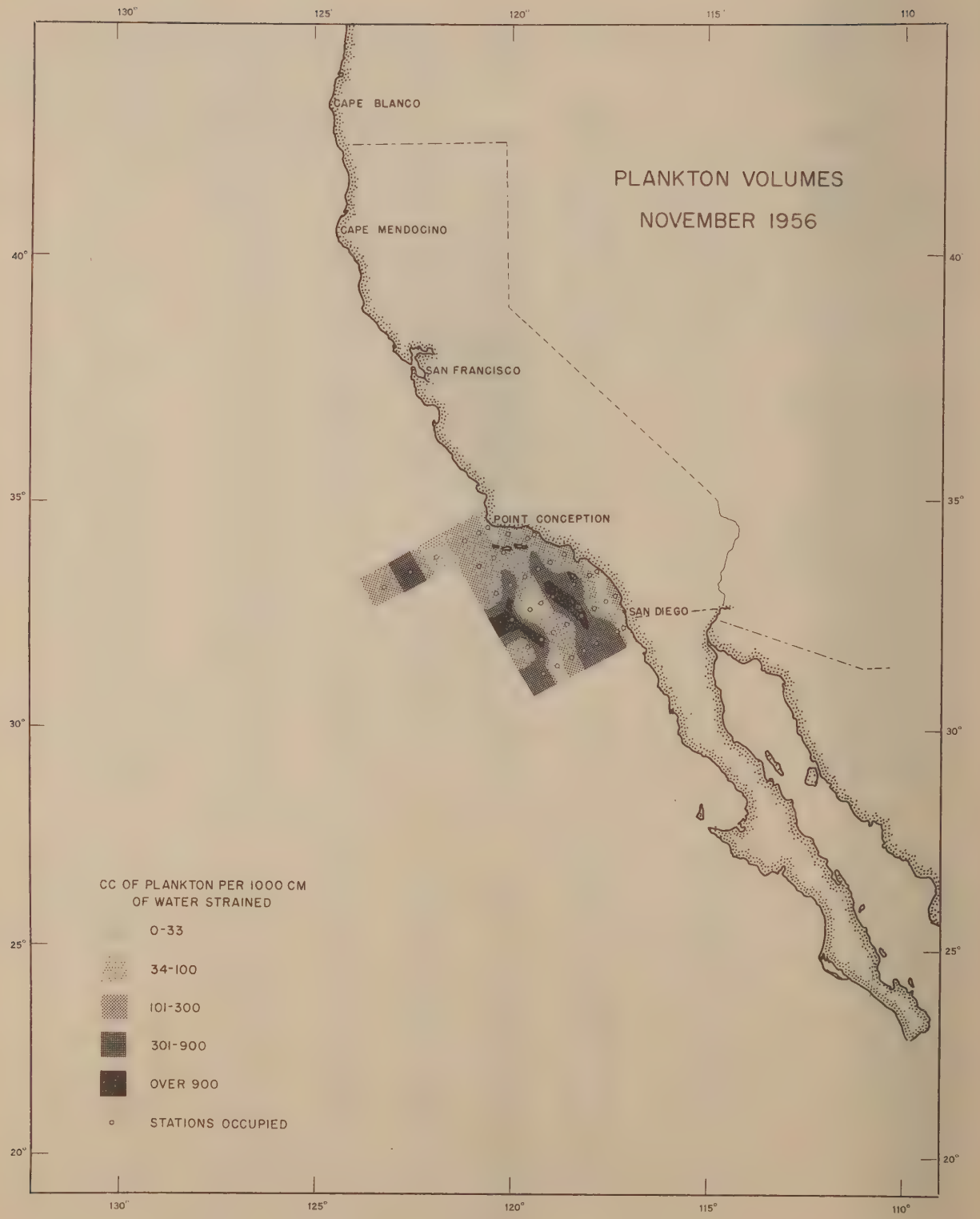
Plankton Volumes, Cruise 5609, September 1956 (cont'd)

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
117.30	28°48'	114°56.5'	IX-15	1447	1458	286	0-84	91	91
117.35	28°38'	115°16'	IX-15	1201	1216	492	0-124	79	79
117.40	28°28'	115°35.5'	IX-15	0901	0916	405	0-135	54	54
118.25	28°40.5'	114°25.5'	IX-14	2302	2312	264	0-77	425	319
118.30	28°30.5'	114°45.5'	IX-15	0217	0228	259	0-90	166	166
118.35	28°20.5'	115°05'	IX-15	0517	0528	288	0-99	52	52
120.25	28°23'	114°14.5'	IX-14	2009	2014	121	0-44	58	58
120.30	28°13'	114°34'	IX-14	1718	1725	188	0-66	197	197
120.35	28°03'	114°54'	IX-14	1413	1421	166	0-68	84	84
120.40	27°56.5'	115°14'	IX-14	1134	1138	108	0-21	120	120
120.45	27°43'	115°33'	IX-14	0821	0835	426	0-128	275	275
123.37	27°24'	114°39.7'	IX-13	2023	2030	234	0-65	444	444
123.42	27°14'	114°59.7'	IX-13	2311	2326	415	0-136	207	207
123.45	27°08'	115°11.2'	IX-14	0140	0156	406	0-148	237	237
127.34	26°55.3'	114°06'	IX-13	1428	1435	241	0-68	249	249
127.40	26°43.5'	114°29.5'	IX-13	1106	1120	439	0-135	118	118
127.45	26°33.5'	114°48.7'	IX-13	0811	0825	399	0-144	168	168
130.30	26°29'	113°29'	IX-12	0450	0458	260	0-56	366	366
130.35	26°19'	113°48.5'	IX-12	1926	1941	434	0-144	318	318
130.40	26°09'	114°07.5'	IX-12	2241	2256	417	0-143	223	223
130.45	25°59'	114°25.7'	IX-13	0151	0205	442	0-138	386	386
133.25	26°04.6'	112°48'	IX-11	2243	2250	182	0-70	204	204
133.30	25°54.5'	113°07.5'	IX-11	1936	1950	373	0-149	129	129
137.23	25°34.2'	112°18.7'	IX-11	0738	0745	232	0-62	142	142
137.30	25°20'	112°45.5'	IX-11	1041	1055	258	0-138	155	155

Plankton Volumes, Cruise 5610, October 1956

80.51	34°26.5'	120°32'	IX-28	1233	1240	281	0-72	146	146
80.55	34°18.6'	120°48'	IX-28	1446	1501	479	0-141	175	175
80.60	34°08.8'	121°09'	IX-28	1721	1736	483	0-141	4080	226
80.70	33°49'	121°51'	IX-28	2216	2230	484	0-141	343	250
80.80	33°28.5'	122°32'	IX-29	0311	0326	465	0-140	432	310
80.90	33°09'	123°12.5'	IX-29	0816	0830	483	0-144	325	114
82.47	34°14.7'	119°58'	IX-30	0736	0751	488	0-140	326	158
83.40	34°13.4'	119°22'	IX-30	1225	1226	34	0-7	294	294
83.43	34°07.6'	119°34'	IX-30	1036	1050	498	0-142	94	94
83.51	33°51'	120°07'	IX-30	0302	0313	366	0-105	71	71
83.55	33°42.2'	120°22.2'	IX-30	0031	0046	485	0-135	542	233
83.60	33°25'	120°52.5'	IX-29	2011	2026	470	0-140	883	287
87.36			Not occupied						
87.40	33°40'	118°59'	IX-30	1706	1721	472	0-141	1613	187

Figure 12.--Plankton Volumes
November 1956



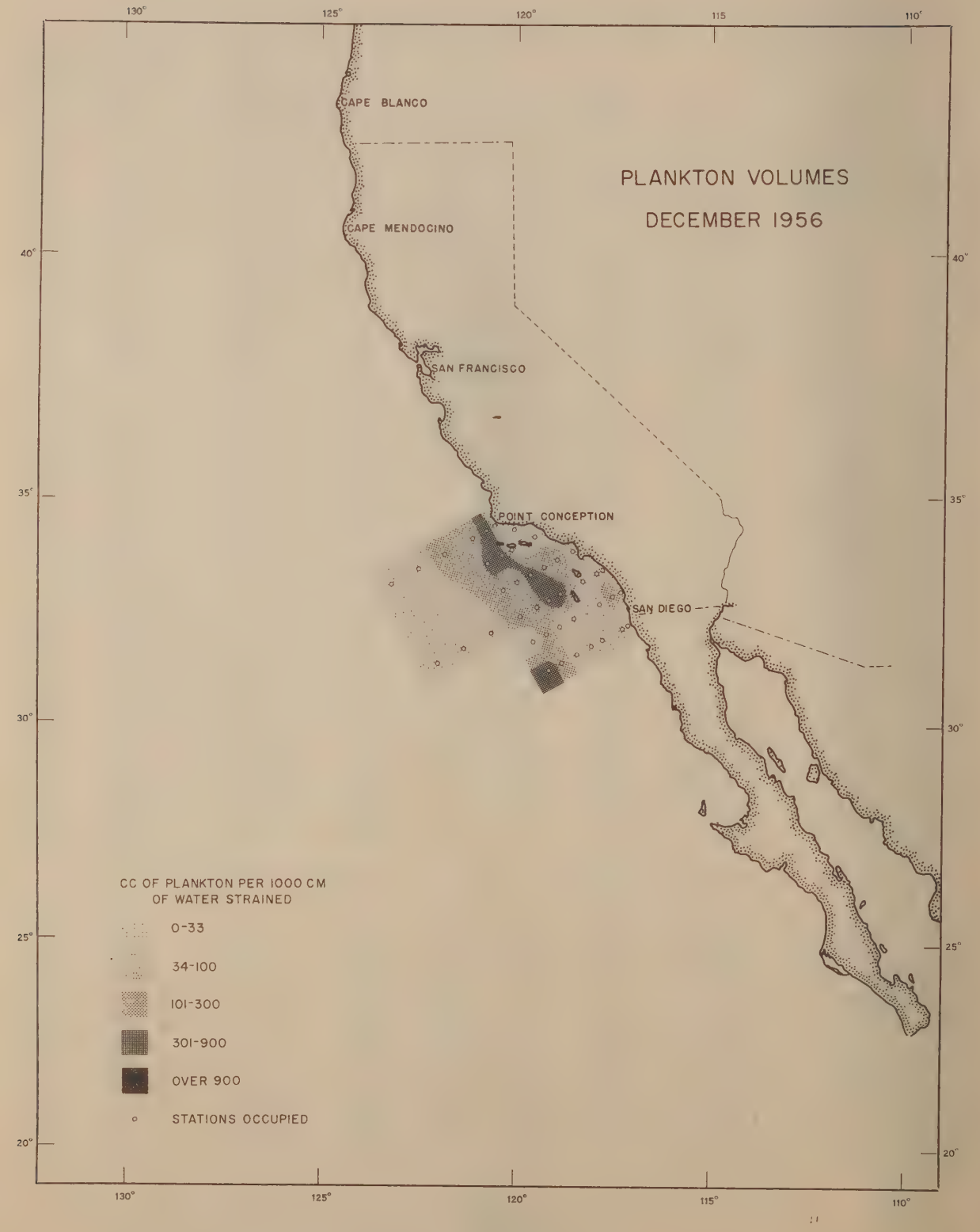
Plankton Volumes, Cruise 5610, October 1956 (cont'd)

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
87.45	33°29.9'	119°19.4'	IX-30	1956	2010	466	0-141	936	157
87.50	33°19.5'	119°42.3'	IX-30	2334	2339	177	0-51	288	288
87.55	33°10'	120°00'	X-1	0201	0216	433	0-147	1256	268
87.60	33°00'	120°22'	X-1	0436	0451	427	0-145	777	356
90.28	33°28.3'	117°45.5'	X-3	0438	0447	262	0-84	84	84
90.30	33°24'	117°54.6'	X-3	0246	0300	502	0-141	893	116
90.37	33°10.2'	118°23'	X-2	2316	2331	460	0-142	807	139
90.45	32°54.5'	118°55.6'	X-2	1851	1906	462	0-141	945	188
90.50	32°44.5'	119°16.1'	X-2	1456	1510	461	0-140	640	61
90.55	32°41.2'	119°32'	X-2	1226	1240	486	0-141	912	88
90.60	32°26.5'	119°59'	X-2	0836	0851	472	0-142	212	104
90.70	32°06	120°39.5'	X-2	0336	0350	410	0-141	595	139
90.80	31°45	121°18.5'	X-1	2301	2316	466	0-141	960	161
90.90	31°25'	121°58.5'	X-1	1831	1846	471	0-140	4520	134
93.27	32°55.2'	117°19.6'	X-3	1241	1256	434	0-141	85	85
93.30	32°49.6'	117°31.3'	X-3	1436	1450	437	0-141	96	80
93.35	32°40'	117°51.7'	X-3	1736	1751	460	0-140	1212	1166
93.40	32°30'	118°12.3'	X-3	2006	2021	454	0-139	569	77
93.45	32°19'	118°32.5'	X-3	2241	2256	437	0-142	1713	1262
93.50	32°09.5'	118°53'	X-4	0136	0150	460	0-141	280	178
93.55	31°55.5'	119°10'	X-4	0411	0426	408	0-141	2010	135
93.60	31°51'	119°18'	X-4	0701	0716	452	0-140	294	155
97.30	32°15.5'	117°08.4'	X-5	0443	0450	192	0-56	104	104
97.32	32°11.5'	117°16.5'	X-5	0316	0330	440	0-142	428	359
97.40	31°53'	117°48.5'	X-4	2136	2151	437	0-144	2033	176
97.45	31°42.5'	118°08'	X-4	1856	1911	464	0-141	650	237
97.50	31°31.5'	118°27'	X-4	1546	1601	454	0-142	2851	916
97.55	31°21'	118°47'	X-4	1336	1350	453	0-143	2472	60
97.60	31°17'	118°55'	X-4	1206	1220	460	0-142	250	183

Plankton Volumes, Cruise 5611, November 1956

80.51	34°26.5'	120°32.6'	XI-3	0803	0812	275	0-84	69	69
80.55	34°18.4'	120°48.2'	XI-3	1021	1036	456	0-140	151	151
80.60	34°09'	121°10'	XI-3	1311	1326	462	0-131	197	104
80.70	33°49'	121°54'	XI-3	1801	1816	433	0-140	159	90
80.80	33°29'	122°32'	XI-3	2211	2226	445	0-139	773	683
80.90	33°11'	122°56.5'	XI-4	0246	0301	460	0-135	495	252
82.47	34°15'	119°58.3'	XI-3	0336	0351	442	0-136	336	223
83.40	34°13.5'	119°22'	XI-2	2315	2317	65	0-14	232	232
83.43	34°08'	119°34.1'	XI-3	0041	0055	436	0-133	206	206
83.51	33°51'	120°09.5'	XI-4	2111	2126	421	0-140	340	204

Figure 13.--Plankton Volumes
December 1956



Plankton Volumes, Cruise 5611, November 1956 (cont'd)

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
83.55	33°44'	120°24'	XI-4	1811	1826	451	0-135	350	213
83.60	33°34'	120°45'	XI-4	1526	1541	454	0-131	163	163
87.36	33°49'	118°42'	XI-2	1756	1811	462	0-125	216	216
87.40	33°41'	118°58.5'	XI-2	1536	1550	425	0-137	155	155
87.45	33°31.7'	119°16'	XI-2	1251	1306	463	0-131	359	359
87.50	33°20.5'	119°39.2'	XI-2	0958	1005	218	0-59	428	152
87.55	33°09.8'	120°00'	XI-2	0636	0651	431	0-139	481	320
87.60	33°00'	120°21'	XI-2	0246	0301	460	0-138	747	146
90.28	33°28'	117°48'	X-31	1951	2006	460	0-133	539	61
90.30	33°24.5'	117°55'	X-31	2116	2131	581	0-140	176	176
90.37	33°10.5'	118°23.5'	XI-1	0106	0121	546	0-130	653	539
90.45	32°59'	118°58.5'	XI-1	0906	0921	480	0-136	1448	1215
90.50	32°49'	119°19.5'	XI-1	1206	1221	424	0-140	155	92
90.55	32°40'	119°39'	XI-1	1541	1556	541	0-106	92	50
90.60	32°28'	119°58'	XI-1	1936	1951	517	0-116	1101	913
93.27	32°57'	117°18.5'	X-31	1349	1354	177	0-32	175	175
93.30	32°52.7'	117°29.1'	X-31	1141	1156	497	0-141	56	56
93.35	32°40'	117°52.5'	X-31	0851	0906	491	0-139	161	122
93.40	32°33'	118°15'	X-31	0606	0621	483	0-139	1497	1238
93.45	32°23.5'	118°39'	X-31	0241	0256	489	0-144	660	114
93.50	32°13'	118°57'	X-31	0001	0016	512	0-138	603	113
93.55	32°01.5'	119°16'	X-30	2106	2121	489	0-139	1789	1227
93.60	31°50'	119°34'	X-30	1816	1831	492	0-141	587	207
97.30	32°15'	117°08.5'	X-29	1859	1903	112	0-28	54	54
97.32	32°10.5'	117°17'	X-29	2011	2026	493	0-142	467	398
97.40	31°55'	117°46.5'	X-30	0036	0051	510	0-140	598	312
97.45	31°45'	118°04'	X-30	0356	0411	468	0-144	1104	333
97.50	31°33.5'	118°24'	X-30	0641	0656	493	0-138	195	134
97.55	31°21.5'	118°47'	X-30	0946	1001	495	0-140	77	77
97.60	31°16.5'	119°11'	X-30	1236	1251	481	0-141	798	798

Plankton Volumes, Cruise 5612, December 1956

80.51	34°26'	120°32.8'	XII-5	1417	1430	412	0-112	435	44
80.55	34°19.6'	120°48.1'	XII-5	1616	1631	466	0-138	599	358
80.60	34°09.2'	121°09'	XII-5	1856	1911	462	0-142	424	236
80.70	33°47.5'	121°51.5'	XII-6	0016	0031	452	0-145	734	243
80.80	33°27.3'	122°33.2'	XII-6	0531	0546	465	0-143	80	80
80.90	33°06.8'	123°15'	XII-6	1046	1101	462	0-141	56	56
82.47	34°14.8'	119°58'	XII-7	1206	1221	480	0-141	148	71
83.40			Not occupied						
83.43	34°07.8'	119°34'	XII-7	1506	1521	465	0-146	176	58
83.51	33°51.2'	120°08'	XII-7	0736	0750	451	0-143	73	73
83.55	33°43.5'	120°29.5'	XII-7	0506	0521	505	0-140	645	333
83.60	33°32.5'	120°46'	XII-7	0146	0201	461	0-141	1150	842

Sta.	Position N.lat.	W.long.	(1956) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
87.36	33°47.9'	118°42.1'	XII-7	2041	2056	457	0-141	59	59
87.40	33°40.1'	118°59'	XII-7	2251	2306	466	0-141	229	202
87.45	33°30.1'	119°19.4'	XII-8	0136	0151	463	0-141	473	300
87.50	33°20'	119°40'	XII-8	0419	0423	129	0-34	481	481
87.55	33°10'	120°01'	XII-8	0646	0701	447	0-142	658	152
87.60	33°00'	120°22'	XII-8	0921	0936	443	0-142	456	285
90.28	33°28.3'	117°45.7'	XII-10	1559	1603	154	0-33	52	52
90.30	33°24'	117°55.1'	XII-10	1436	1451	488	0-139	41	41
90.37	33°10.3'	118°23.2'	XII-10	0801	0816	507	0-141	71	71
90.45	32°54.5'	118°55.5'	XII-10	0341	0355	482	0-140	1971	301
90.50	32°45.5'	119°17'	XII-10	0046	0101	500	0-141	554	352
90.55	32°36.7'	119°39.5'	XII-9	2156	2211	483	0-142	733	276
90.60	32°30'	120°05'	XII-9	1901	1916	494	0-133	318	223
90.70	32°04'	120°39'	XII-9	1200	1216	493	0-143	49	49
90.80	31°45'	121°19'	XII-9	0626	0641	483	0-136	619	72
90.90	31°30'	121°51'	XII-8	2304	2321	466	0-153	434	90
93.27	32°55'	117°20'	XII-10	2042	2053	382	0-105	66	66
93.30	32°50'	117°31.5'	XII-10	2226	2241	470	0-138	115	115
93.35	32°39.5	117°52'	XII-11	0056	0111	505	0-138	164	63
93.40	32°29.5'	118°13'	XII-11	0326	0341	460	0-134	269	52
93.45	32°19.5'	118°34'	XII-11	0556	0611	441	0-131	663	95
93.50	32°09.5'	118°53'	XII-11	0826	0841	470	0-137	72	72
93.55	32°00'	119°13.5'	XII-11	1056	1111	475	0-135	206	206
93.60	31°50'	119°34'	XII-11	1326	1341	471	0-140	34	34
97.30	32°15'	117°09'	XII-12	0959	1003	152	0-32	13	13
97.32	32°11.2'	117°16.5'	XII-12	0826	0841	487	0-139	60	60
97.40	31°54.5'	117°51.5'	XII-12	0416	0431	466	0-138	58	58
97.45	31°44.5'	118°11'	XII-12	0146	0201	498	0-141	357	80
97.50	31°35'	118°31'	XII-11	2256	2311	454	0-141	592	62
97.55	31°28'	118°50.5'	XII-11	2031	2046	450	0-144	208	112
97.60	31°15'	119°11'	XII-11	1756	1811	466	0-137	561	331

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